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DURUM WHEAT



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QUALITY REPORT

Physical, Chemical, Milling, and Macaroni Characteristics

1975 CROP

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTH CENTRAL REGION

and
NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF CEREAL CHEMISTRY & TECHNOLOGY

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
in cooperation with
STATE AGRICULTURAL EXPERIMENT STATIONS

QUALITY EVALUATION OF DURUM WHEAT VARIETIES

1975 CROP^{1/}

by

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^{1/} This is a progress report of cooperative investigations containing some results that have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and to those persons having direct and special interest in the development of agricultural research programs.

This report was compiled by the Agricultural Research Service, U.S. Department of Agriculture. Special acknowledgment is made to the North Dakota State University for their facilities and services provided in support of these studies. The report is not intended for publication and should not be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

Hard Red Spring and Durum Wheat Quality Laboratory
Fargo, North Dakota

COOPERATING AGENCIES, STATIONS, AND PERSONNEL

The cooperating agencies, stations, and personnel conducting the varietal plot and nursery experiments concerned with these durum tests in 1975 were as follows:

California Agricultural Experiment Station:

Delta and El Centro: W. F. Lehman, Y. P. Puri,
and C. O. Qualset

Minnesota Agricultural Experiment Station:

Crookston and Morris: R. E. Heiner*, L. S. Smith,
and D. D. Warnes

Montana Agricultural Experiment Station:

Havre and Sidney: F. H. McNeal*, M. A. Berg*,
R. T. Harada, and G. P. Hartman

North Dakota Agricultural Experiment Station:

Carrington, Dickinson, and Williston: T. J. Conlon,
E. French, L. Joppa*, R. Nowatzki, H. Olson, and
J. Quick

Oregon Agricultural Experiment Station:

Pendleton: W. H. Foote, J. T. McDermid, and C. R. Rohde

South Dakota Agricultural Experiment Station:

Selby and Watertown: J. J. Bonneman, R. W. Pylman, and
W. D. Stegmeier

Washington State University:

Pullman and Royal Slope: C. F. Konzak, M. A. Davis,
and E. Donaldson

* ARS Employees

COOPERATIVE AGENCIES, STATIONS, AND PERSONNEL

The cooperating agencies, stations, and personnel conducting the various pilot and survey experiments conducted with these groups since 1935 were as follows:

California Agricultural Experiment Station:

Winters and El Centro: W. F. Lohman, V. H. Hurt,
and C. O. Gossard

Minnesota Agricultural Experiment Station:

Crookston and Morris: R. E. Peterson, I. J. Smith,
and B. B. Brown

Montana Agricultural Experiment Station:

Bozeman and Sidney: E. W. McNeal, W. A. Berg,
R. T. Harbeck, and G. F. Harman

North Dakota Agricultural Experiment Station:

Carleton, Dickinson, and Williston: T. G. Cantan,
E. French, L. J. Jorgensen, R. McNeal, R. Olson, and
J. Quirk

Oregon Agricultural Experiment Station:

Pendleton: W. H. Foster, A. T. McManis, and C. R. Nelson

South Dakota Agricultural Experiment Station:

Sully and Watertown: A. J. Bonner, R. W. Pyle, and
W. D. Zimmerman

Washington State University:

Pullman and Royall: C. E. Knight, W. A. Davis,
and E. Bonshon

INTRODUCTION

The thirteenth Durum Wheat Quality Report contains data for the 1975 crop. Samples of standard varieties and new strains of durum wheat grown in cooperative experiments in the durum wheat region of the United States^{2/} were milled and evaluated by the Hard Red Spring and Durum Wheat Quality Laboratory in cooperation with the Department of Cereal Chemistry and Technology on the campus of North Dakota State University at Fargo, North Dakota. The evaluation of some of the durum wheats is integrated with the work done by the Department of Cereal Chemistry and Technology of North Dakota State University. Methods and techniques are described in detail in the text of the report.

Where sufficient quantity of sample was available for macro processing, the semolina was processed into spaghetti to determine the quality characteristics. When the quantity of semolina was insufficient (micro quantity), only the color of the semolina (Gardner^{3/} color score) was determined.

The purpose of this report is to make available to cooperators the quality data on standard varieties and new strains of durum wheat from the 1975 crop.

^{2/} Heiner, R. E., Elsayed, F. A., and Quick, J. S. Wheat varieties grown in cooperative plot and nursery experiments in the spring wheat region in 1975. Agricultural Research Service, U.S. Department of Agriculture.

^{3/} Mention of a trademark name or proprietary product does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture, and does not imply its approval to the exclusion of other products that may also be suitable.

INTRODUCTION

The following Bureau Wheat Quality Report contains data for the 1975 crop. Samples of standard varieties and new strains of wheat grown in cooperative experiments in the durum wheat region of the United States) were milled and evaluated by the Hard Red Spring and Durum Wheat Quality Laboratory in cooperation with the Department of Cereal Chemistry and Technology at the University of North Dakota State University at Fargo, North Dakota. The evaluation of some of the durum wheat is integrated with the work done by the Department of Cereal Chemistry and Technology at North Dakota State University. Methods and techniques are described in detail in the text of the report.

Where sufficient quantity of sample was available for more processing, the sample was processed into spaghetti to determine the quality characteristics. When the quantity of sample was insufficient (micro quantity), only the color of the semolina (durum) color score) was determined.

The purpose of this report is to make available to cooperators the quality data on standard varieties and new strains of durum wheat from the 1975 crop.

2) Nelson, A. E., Elzein, F. A., and Jolly, J. S. Wheat varieties grown in cooperative plot and nursery experiments in the United States region in 1975. Agricultural Research Service, U.S. Department of Agriculture.

3) Mention of a trademark name or proprietary product does not constitute a statement or warranty of the product by the U.S. Department of Agriculture, and does not imply its approval for the inclusion of other products that may also be suitable.

SOURCE OF THE 1975 CROP SAMPLES

Six hundred and fifty-nine durum samples were received from 14 stations in 7 states--California, Minnesota, Montana, North Dakota, Oregon, South Dakota, and Washington--for quality evaluation as follows:

Uniform Nursery (314 samples): Crookston and Morris, MN; Havre and Sidney, MT; Carrington, Dickinson, and Williston, ND; Selby and Watertown, SD; Pullman, WA; and Pendleton, OR. The varieties and selections included in this nursery are listed on page 5.

Advanced Nursery (115 samples): Sidney, MT; Pendleton, OR; and Pullman (Royal Slope), WA.

Preliminary Nursery (127 samples): Delta, CA; and Royal Slope, WA.

Field Plots (92 samples): Delta and El Centro, CA; and Dickinson and Williston, ND.

International Nursery (11 samples): Pullman (Royal Slope), WA.

1975 CROP UNIFORM REGIONAL DURUM NURSERY

Entry No.	Entry	CI or Sel. No.	Year Entered	Origin
1	MINDUM	5296	1929	Minnesota
2	WELLS	13333	1957	ND-USDA
3	LEEDS	13768	1963	"
4	ROLETTE	15326	1968	"
5	WARD	15892	1969	"
6	WAKOOMA	DT316	1968	Saskatchewan
7	CROSBY	17282	1970	ND-USDA
8	BOTNO	17283	"	"
9	RUGBY	17284	"	"
10	MACOUN	DT332	1972	Saskatchewan
11	Lds//61130/Lds	D6962**	1972	North Dakota
12	CANDO	D7057**	"	" "
13	Lds//61130/Lds	D7047**	1973	" "
14	6580/Ward	D71110	"	" "
15	Ward/6714	D71117	"	" "
16	DT188/DT224//DT182	DT411	1974	Manitoba
17	Lds//W1s/PI274678	D7131	"	North Dakota
18	6568/6148	D7158**	"	" "
19	R1t/6645	D7169**	"	" "
20	6530/65114	D7175	"	" "
21	6580/Ward	D71111	"	" "
22	6515/Ward	D71101	1975	" "
23	Ward/6714	D71121	"	" "
24	6515/Ward	D7233	"	" "
25	6633/6647	D7266**	"	" "
26	68140/Ward	D72108	"	" "
27	68111/Ward	D72110*	"	" "
28	68112/Ward	D72114*	"	" "
29	6710/6780	D7268*	"	" "
30 ^{1/}	R1t/Lds	D7275	"	" "

** Semidwarfs

* Medium height

1/ Grown only at ND stations



METHODS

The methods used in the testing of the samples were essentially the same as given in the last report, with the addition of some new tests and interpretations of the tests, as well as deletions.

Briefly, the following methods and terminologies were applied:

Test Weight Per Bushel (TW) - The weight per Winchester bushel of dockage-free wheat.

Thousand Kernel Weight (KW) - The 1000 kernel weight was determined by counting the number of kernels in a 10 g sample of cleaned, picked wheat on an Asco Seed Counter^{3/}.

Kernel Size - The percentage of the size of the kernels [large (LG), medium (MD), and small (SM)] was determined on a wheat sizer as described by Shuey^{4/}.

The sieves of the sizer were clothed as follows:

Top Sieve	- Tyler # 7 with 2.92 mm opening
Middle Sieve	- Tyler # 9 with 2.24 mm opening
Bottom Sieve	- Tyler #12 with 1.65 mm opening

Milling - The samples were cleaned by passing the wheat over an Emerson Kicker and Dockage Tester^{3/} and through a modified Forster Scourer Model 6 ^{3/}. The clean, dry samples were pretempered to 12.5% for at least 72 hours prior to any additional tempering before milling.

The field plot and large advanced yield nursery samples were milled on a Buhler^{3/} experimental mill specially designed for milling durum wheat. The mill is equipped with corrugated rolls throughout and the semolina purified on a Miag^{3/} laboratory purifier. All of the stock is handled pneumatically. The mill flow is shown on page 7. The clean, dry wheat was tempered in three stages: first to 12.5% moisture at least 72 hours prior to the second stage which is to add an additional 2.0% for 18 hours to give a cumulative moisture of 14.5%, then a final temper of 3.0%, 45 minutes prior to milling. The purified semolina is used in testing the quality of semolina. The semolina extraction (SEEX) was calculated on a total products basis.

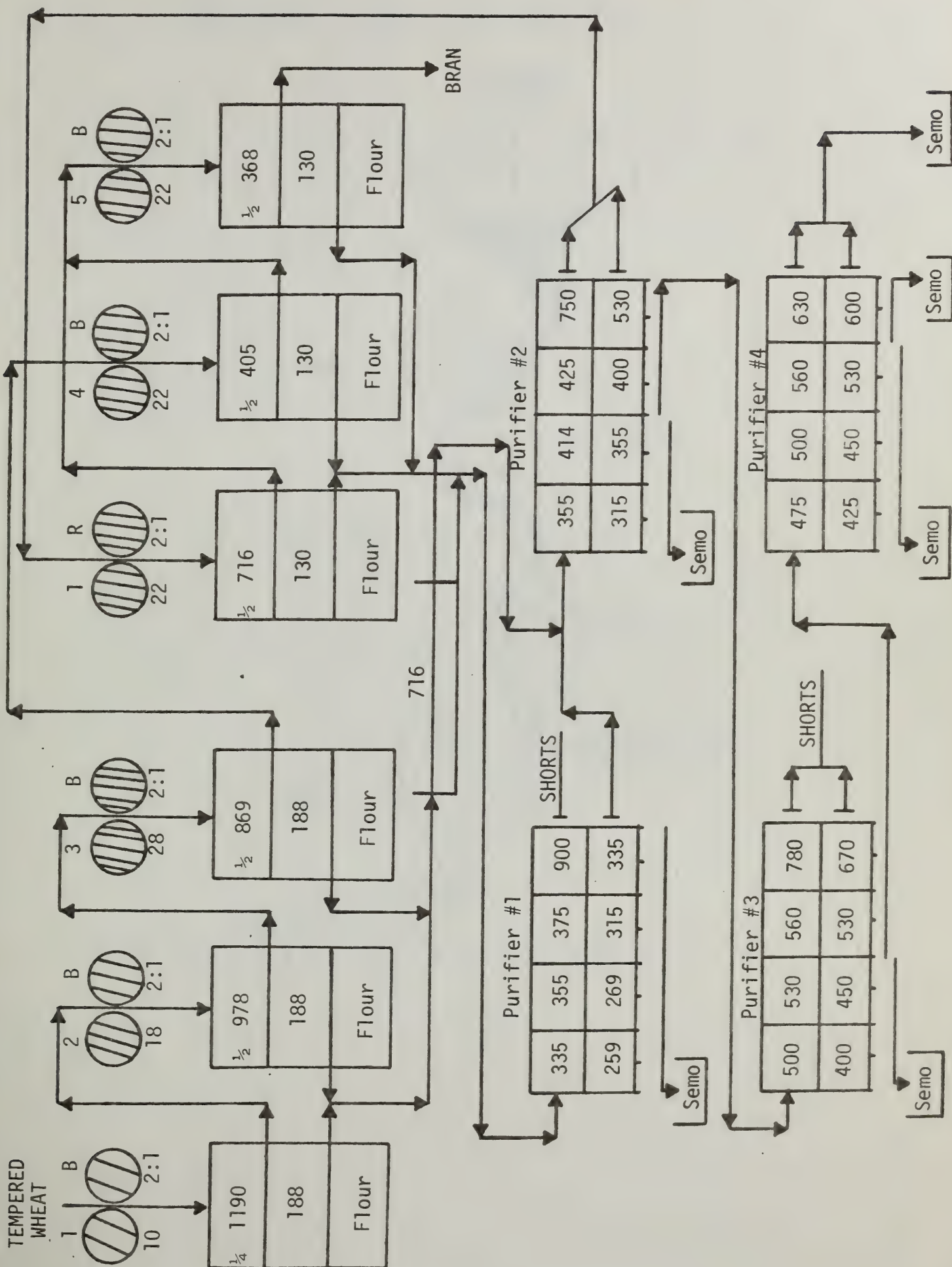
The small samples were milled according to the method of Vasiljevic et al.^{5/}. The flow diagram of this system is shown on page 8. Extraction is determined on a clean, dry basis.

^{4/} Shuey, William C. A wheat sizing technique for predicting flour milling yield. Cereal Sci. Today 5: 71 (1960).

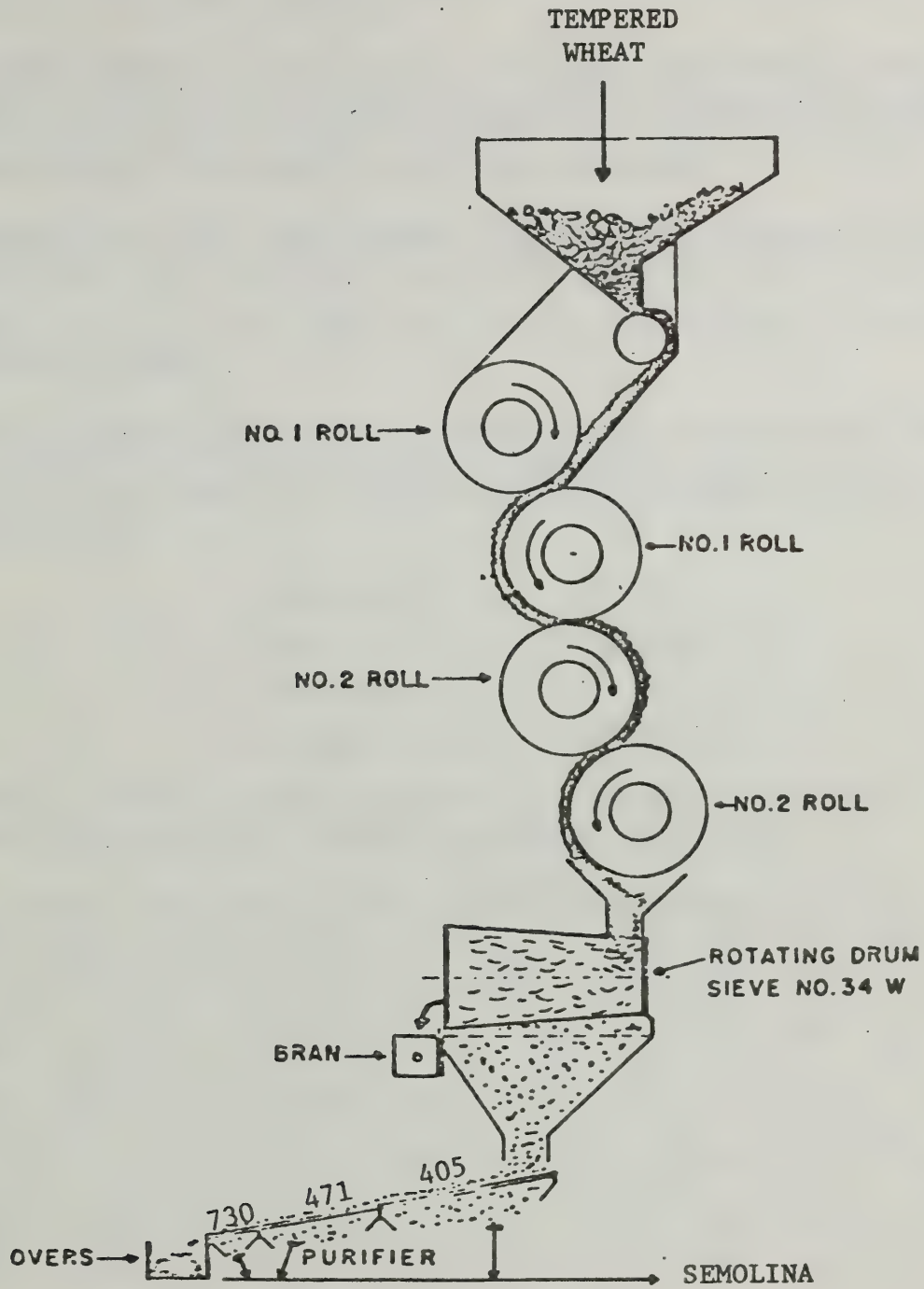
^{5/} Vasiljevic, S., Banasik, O. J., and Shuey, W. C. A micro unit for producing durum semolina. (In press - Cereal Chem.)



FLOW DIAGRAM FOR LARGE DURUM WHEAT SAMPLES



FLOW DIAGRAM FOR SMALL DURUM WHEAT SAMPLES



Protein Content (PR) - The protein was calculated by multiplying by the factor of 5.7, the percent nitrogen, as determined by the standard Kjeldahl procedure.

Mineral Content or Ash Content - This was determined by measuring the residue of the minerals left after incinerating the sample for approximately 16 hours at 600°C. The results were reported as percentage of the sample which was incinerated.

Absorption - This was the water, expressed as percent of the semolina, required to bring the dough to the proper consistency.

All values (protein, ash, absorption) are reported on a 14% moisture basis.

MACRO Spaghetti Processing - Spaghetti was processed on a semi-commercial scale pasta extruder (DEMACO)^{3/}. The control as well as sprouted durum was processed with the following extruding conditions.

Temperature 49.5°C
Rate 12 rpm
Absorption 31.5%
Vacuum 18 in Hg

These were the optimum conditions for processing spaghetti, which were calculated by a linear programming technique.

To process the pasta, 1000 g batch^{6/} was premixed by slowly adding the water and mixing at slow speed for approximately 30 seconds, and high speed for 10 seconds, then add the remainder of the water at slow speed in a Hobart C-100-T^{3/} mixer equipped with a pastry knife agitator. After all of the water has been added, the semolina and water are blended at high speed for 30 seconds; the mixer was stopped to scrape down the sides of the bowl and the blending continued for 90 seconds more to complete the premix stage. The premixed pasta was then transferred to the vacuum mixer of the press and extruded through an 84-strand 0.043 in teflon spaghetti die. A jacketed extension tube (9¼" long x 1-3/4" inside diameter) was attached to the semicommercial pasta extruder to allow more

6/ Weight was determined as follows:

$$\left[\frac{100-m_1}{100-m_2} - 1 \right] \left(W - W (m_2-m_1) \right) = \text{Amount H}_2\text{O added}$$

where:

m_1 = original moisture
 m_2 = desired moisture
 W = desired amount of sample



time for hydration of the semolina and minimize the number of white specks (unhydrated semolina) in the spaghetti. Extrusion temperature was controlled by a circulating water bath.

MICRO Spaghetti Processing - Thirty grams of semolina were mixed with water to form a stiff dough, pressed into spaghetti and dried. The equipment and procedure have been described by Harris and Sibbitt^{7/} and Fifield^{8/}.

Spaghetti Drying - Spaghetti was dried in an experimental pasta dryer for an 18 hour cycle as described by Gilles, Sibbitt, and Shuey^{9/}. During the drying period, the humidity of the dryer was decreased linearly from 95 to 60% R.H. and the temperature was held constant at 100°F.

Color Score - The color of the spaghetti or semolina has been generally accepted as the most important single grading factor. A deep amber or golden color is the most preferable. The amount of yellow pigmentation determines the extent or degree of amber-ness.

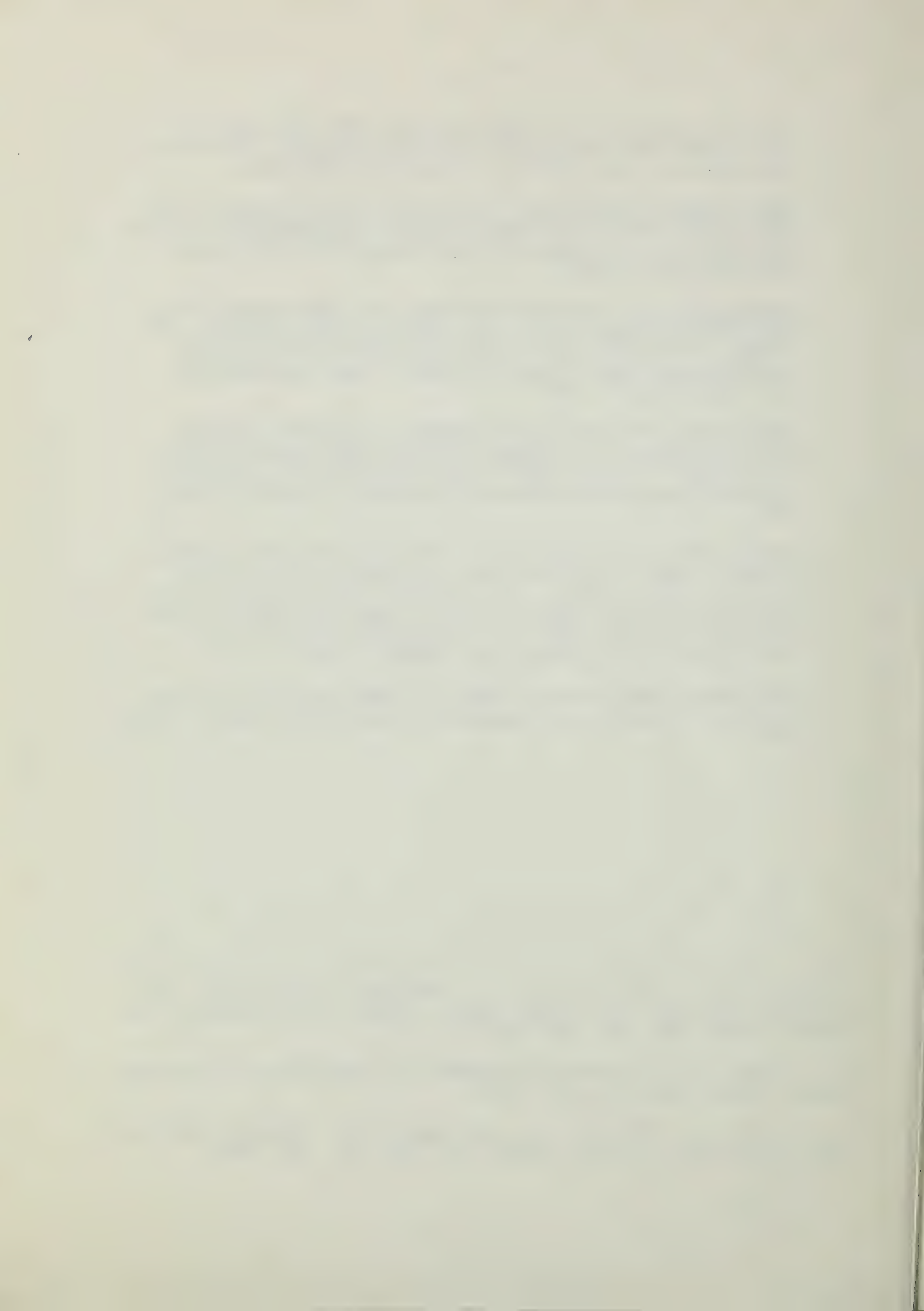
Samples which have a color rating 1.5 points below the standard spaghetti score or 9 points below the standard semolina color score are unsatisfactory. It is possible that the average color score for a crop year may be higher or lower than average, therefore, this would be taken into consideration when giving the overall rating of a variety over a number of years.

The grading system shown on page 11 has been adopted for scoring the color of semolina and spaghetti relative to the standard color score.

^{7/} Harris, R. H., and Sibbitt, L. D. Experimental durum milling and processing equipment with further quality studies on North Dakota durum wheats. Cereal Chem. 19: 388 (1942).

^{8/} Fifield, C. C. Experimental equipment for manufacture of alimentary pastes. Cereal Chem. 11: 330 (1934).

^{9/} Gilles, K. A., Sibbitt, L. D., and Shuey, W. C. Automatic laboratory dryer for macaroni products. Cereal Sci. Today 11: 322 (1966).



COLOR SCORE

<u>Semolina</u>	<u>Spaghetti</u>	<u>Description</u>
9 above	1.5 above	Much deeper and intense yellow pigmentation than standard
6 above	1.0 above	Deeper and more intense yellow pigmentation than standard
3 above	0.5 above	Slightly deeper and more intense yellow pigmentation than standard
Equal to Standard	Equal to Standard	Standard quality, depth and intensity of yellow pigmentation
3 below	0.5 below	Slightly less depth and intensity, but sufficient quantity of pigmentation
6 below	1.0 below	Slightly less quantity as well as depth and intensity of pigmentation than the standard, but still sufficient to be rated satisfactory on the basis of color
9 below	1.5 below	Sufficiently less quantity of yellow pigmentation than the standard to give a pale yellow color and graded unsatisfactory for color score.

Semolina Color Score (DU) - The semolina color score was determined by using Model XL-10 Gardner Digital Color Difference Meter^{3/}. The instrument was calibrated using a yellow standard tile (L = 82.5, a = -3.6, and b = +25.2). A sample of semolina (3/4-inch deep) is placed in a sample cup for an Agtron Reflectance Color Meter^{3/}. After the first reading has been taken, the sample is turned 90 degrees and a second reading is taken and the two readings averaged. The "b" color value is converted to a color score ranging from 1 to 14, with 14 being a deep yellow and the most desirable color. In this report, the semolina color score, reported as "DU" in the tables, is multiplied by a factor of 10.

Spaghetti Color (SP) - The spaghetti color scores were determined on a Model D25 Hunter Color Difference Meter^{3/} equipped with a D25A optical unit. The specimen area (2 in diameter) was covered with straight spaghetti strands and readings were taken against a black background with 0% reflectance. Color difference values (L%, a%, and b%) were measured for all the spaghetti samples by the method

of Walsh, Gilles, and Shuey^{10/}. A uniform chromaticity chart was used for determining spaghetti color scores.

Cooking Characteristics of Spaghetti -

a. Cooking Procedure

A modification of the method of Sheu *et al.*^{11/} was adopted to determine cooking quality of spaghetti used in this study. Spaghetti (10 g) which had been broken into lengths of approximately 5 cm, was placed into 300 ml of boiling 1% NaCl salt solution in a 500 ml beaker. After 10 minutes cooking, the samples were washed thoroughly with distilled water in a Buchner funnel, allowed to drain for 2 minutes, and then weighed to determine cooked weight. The cooking water as well as the washing solution was collected in pre-weighed 250 ml beakers and oven dried to determine the cooked spaghetti residue (RE).

b. Firmness Score (FR)

Two strands of cooked spaghetti were placed on a plexiglass plate and sheared at a 90° angle with a special plexiglass tooth. A continuous recording of distance versus force was made by the instrument during the operation. An automatic integrator was used to calculate the area under the curve (g cm) which was the amount of work required to shear the cooked spaghetti. To measure firmness, the average of three integrator scores was used, and the average work to shear was used as a measure of spaghetti firmness. The firmness score was read directly from the integrator value.

The higher the value, the firmer the spaghetti. A value of approximately 8.75 appears to be of preference.

Calculations were as follows:

$$E = 0.0216 \times A \text{ (g cm)}$$

A = Average integrator reading

E = Area of curve in g cm

^{10/} Walsh, D. E., Gilles, K. A., and Shuey, W. C. Color determination of spaghetti by the tristimulus method. *Cereal Chem.* 46: 7 (1969).

^{11/} Sheu, Ruey-yi, Medcalf, D. G., Gilles, K. A., and Sibbitt, L. D. Effect of biochemical constituents on macaroni quality. I. Differences between hard red spring and durum wheats. *J. Sci. Fd. Agr.* 18: 237 (1967).



DISCUSSION

The following discussion represents some of the basic techniques and criteria used in the milling and cooking quality evaluation of durum wheat samples. Several testing factors are used to determine the overall quality characteristics or final evaluation of a particular sample including in general the kernel characteristics, milling performance, and cooking performance.

Each evaluation factor can be important. A sample could be of a sufficiently poor quality for a given factor to eliminate it from possible future testing. However, a sample submitted for the first time and found to show little promise should be tested again to establish if it has some or good promise, or no promise. A sample which is consistently rated as little promise or no promise should be discarded.

A computer program for evaluating the milling and cooking quality of the durum samples was developed^{12/}. The program was used for evaluating all samples.

Eleven independent variables were selectively incorporated into weighted rating equations. These variables were test weight, kernel weight, percent large, medium and small kernels, semolina extraction, spaghetti and semolina color, visual color, spaghetti firmness and cooking residue. Each of the 11 variables was rated by arbitrary faulting limits compared with a percentage deviation from the standard(s) as major, minor, probable or no fault. For each of the 11 variables, absolute limits were established to give a final evaluation of 1 = "no promise"; 2 = "little promise", 3 = "some promise"; and 4 = "good promise". Some of these ratings automatically translate into an evaluation of 1 because of the absolute limits established.

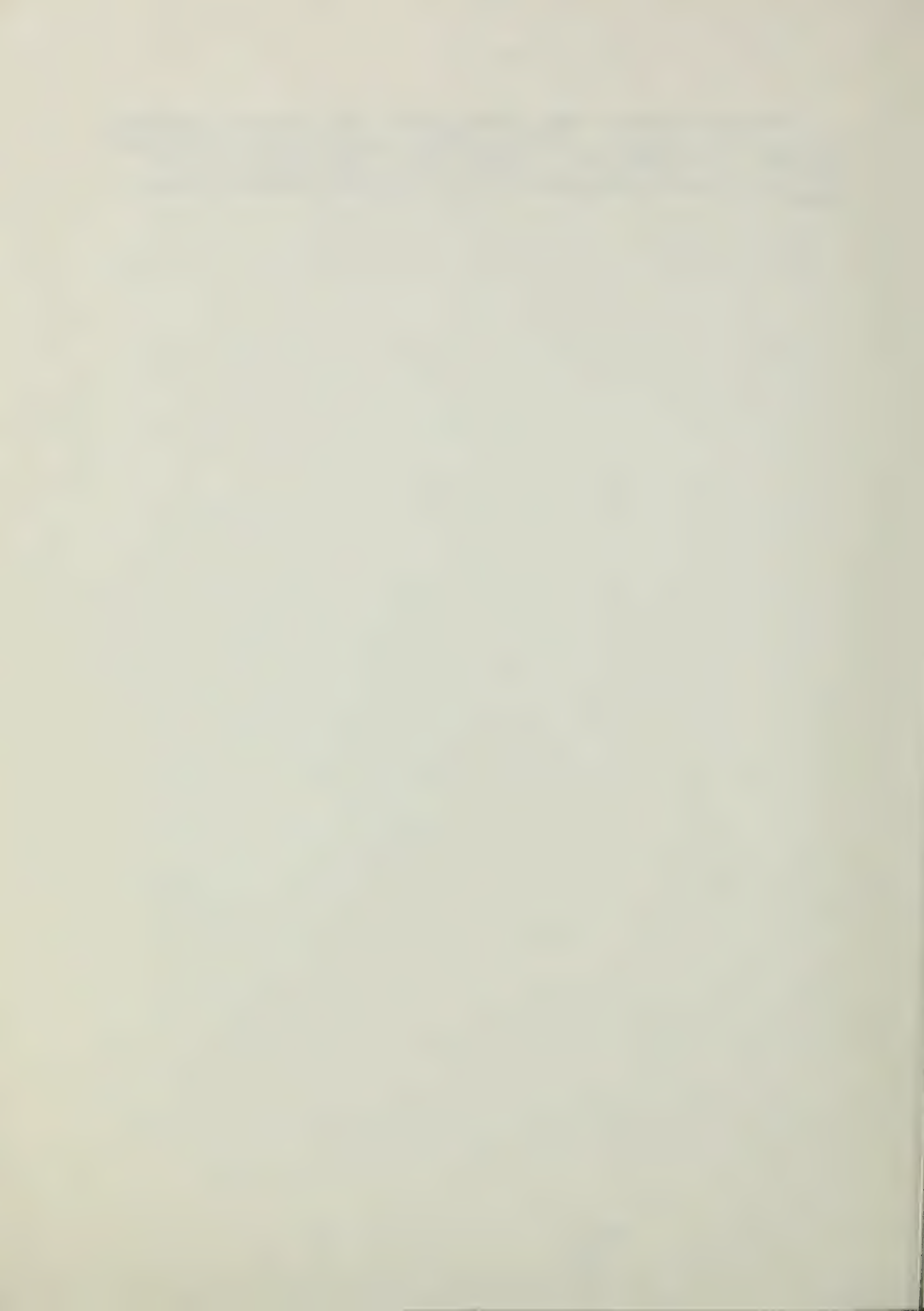
Because of the large number of durum samples received in recent years and the small size of some of the samples, it has become prohibitive to perform all the evaluation tests on each sample. Such limitations prompted the formulation of 12 separate weighting equations each representing a different combination of variables for the final evaluation of the sample. By utilizing these 12 equations, anywhere from 7 to 11 variables in various combinations can be evaluated.

All samples, as in previous years, are compared to a composite standard that represents a blend of the crop year blended to a known quality. However, the samples for the individual stations are evaluated against the average results of the check varieties from the respective stations.

^{12/} Dick, J. W., and Shuey, W. C. A computerized method for evaluating durum wheat quality. Cereal Chem. 53: 910 (1976).



The Final Evaluation (VAL) rating applies only to the data contained in the year of the report. The main defects and outstanding features are discussed. A selection which is promising as a new variety should be continued. A sample which shows little or no promise should be discontinued.



EXPERIMENTAL RESULTS

The results are tabulated and presented in the following order: Tables 1-4, Advanced Nursery Samples; Tables 5-8, Field Plot Nursery Samples; Table 9, International Nursery Samples; Tables 10 & 11, Preliminary Nursery Samples; and Tables 12-22, Uniform Regional Nursery Samples.

None of the samples tested showed signs of sprout damage, although some samples did exhibit weathering, blackpoint or green kernels. The data for the Durum Standard are comparable to the respective North Dakota 1975 durum crop average and may be used for comparing samples grown in nurseries in different areas and environmental conditions to the bulk of the U.S. durum crop.

1. A study involving over 400 samples from two crop years has indicated that the semolina color score (DU) can reasonably predict the spaghetti color score within a half a point which is within the range of duplication. A correlation coefficient of 0.8 was found between the semolina color score and the spaghetti color score.

2. The lipoxidase activity of the present varieties and selections is sufficiently low and does not adversely affect the color when processing semolina into spaghetti.

ADVANCED NURSERY SAMPLES

Sidney, Montana (Table 1). The 3 entries (Crosby, Ward, and Wells) were grown on dryland and under irrigation. Most of the samples showed little or no promise. The deficiencies were kernel weight and size, and semolina speck count.

Pendleton, Oregon (Table 2). Compared to the standard blend, all of the entries except one showed no promise and the one exception showed little promise. The deficiencies were test weight, kernel weight and size, and semolina color.

Pullman (Royal Slope), Washington (Table 3). The entries showing no promise were Wandell, ND006962, Wandell #4, E7124053, CH725037, CH725056, and 72160042. Those showing little promise were entries CH725054 and 71150152. All other entries showed some promise. Many entries showed some deficiency in spaghetti firmness.

Pullman (Royal Slope), Washington (Table 4). The entries showing no promise were TFS73005, S.3 E7124141, S.4 E7124141, 71150156, 71150158, 71150171, 71150172, 71150174, 71150199 and T7500420. All other entries showed some or good promise.



FIELD PLOT NURSERY SAMPLES

Williston, North Dakota (Table 5). Only two entries, D7158 and D7169, showed no promise mainly because of test weight and kernel weight and size. All other entries showed some or good promise. However, several of the entries showed some deficiencies in kernel weight and spaghetti firmness.

Dickinson, North Dakota (Table 6). Only Wells and D7047 showed no promise; the latter because of spaghetti firmness. Nearly all of the entries showed some deficiency in spaghetti firmness.

Delta, California (Table 7). The following entries showed no promise: Ent. 3, Ent. 6, Ent. 13, Ent. 15, Ent. 21, Ent. 24, Ent. 28, and Ent. 162. Primary deficiency was semolina color.

El Centro, California (Table 8). The entries showing good promise were TL-2913, TL-2918, 66058, and 69484. Entries showing some promise were TL-2909, TL-2912, TL-2914, TL-2919, and 69483. All other entries showed no promise primarily because of speck count and semolina color.

INTERNATIONAL NURSERY SAMPLES

Pullman (Royal Slope), Washington (Table 9). Jupateco 73 and Quilafen showed no promise, primarily because of kernel weight. All other entries showed some or good promise. However, some deficiency was noted in the semolina color of many of the entries.

PRELIMINARY NURSERY SAMPLES

Delta, California (Table 10). The following entries showed good promise: Ent 1, Ent 25, Ent 108, and Ent 143. The following entries showed some promise: Ent 121, Ent 5, Ent 6, Ent 41, Ent 45, Ent 78, Ent 134, Ent 136, Ent 139, Ent 141, Ent 144, Ent 7, Ent 111 and Ent 116. All other entries showed little or no promise, primarily because of a major deficiency in semolina color.

Royal Slope, Washington (Table 11). Of the samples processed into spaghetti, only one selection, D7175, showed good promise. All others showed little or no promise because of semolina color, spaghetti color, firmness, and cooked residue. Of the other samples, one (T7500446) showed good promise and seven (T7500442, T7500445, T7500472, T7500473, T7500479, T7500550, and T7500551) showed some promise. Most all of these entries showed some deficiency in milling and semolina color and several were deficient in kernel weight and size.

UNIFORM REGIONAL NURSERY SAMPLES

The data for the Uniform Regional Nursery samples are presented in Tables 12 to 22. The overall general evaluation of the selections grown in Minnesota, North and South Dakota, and Montana are given below:

- D6962 - Shows good promise based on 3 crop years.
- D7047 - Shows good promise based on 3 crop years. However, in all 3 years it tended to have low test weight, low kernel weight, and undesirable kernel size distribution.
- D7057 - Showed good promise. However, based on 3 crop years it shows little promise because of low test weight, low kernel weight, and undesirable kernel size distribution.
- D7131 - Shows good promise based on 2 crop years. At 3 locations in 1975 and 1 location in 1974, the test weight was borderline.
- D7158 - Shows some promise. Based on 2 crop years, it has a tendency towards low test weight, low kernel weight, and undesirable kernel size distribution.
- D7169 - Shows little promise based on 2 crop years, because of low test weight and undesirable kernel size distribution.
- D7175 - Shows good promise based on 2 crop years.
- D71101 - Shows good promise.
- D71110 - Shows some promise based on 3 crop years. It had a major deficiency at one location in semolina color in 1975.
- D71111 - Showed good promise in 1975 and some promise in 1974. Kernel weight and semolina color did not appear to be a deficiency in 1975 as it did in 1974.
- D71117 - Shows good promise based on 3 crop years. However, semolina color could be a problem. It was borderline in 2 years.
- D71121 - Shows good promise.
- D7233 - Shows good promise.
- D7266 - Shows some promise. Shows a tendency towards low test weight and undesirable kernel size distribution.

D7268 - Shows some promise. It has low test weight and undesirable kernel size distribution. Semolina extraction and color could be a problem.

D72108 - Shows good promise.

D72110 - Shows good promise.

D72114 - Shows some promise. Semolina extraction and color could be a problem based on 1 crop year.

DT411 - Shows some promise. Based on 2 crop years, it has low test weight and undesirable kernel size distribution.

Pullman, Washington (Table 21). Selections D7150, D7169, D7171, and D71111 showed no promise primarily because of semolina color. D7150 had minimum color in 1974 at some locations; D7169 was faulted in 1974 for undesirable kernel size distribution; D7171 was faulted in 1974 for poor semolina color; and D71111 was slightly faulted in 1974 for poor color and undesirable kernel size distribution, however, this was not a problem in 1975 in the samples grown in the other states as reported above. All other selections grown at Pullman showed some or good promise.

Pendleton, Oregon (Table 22). Selection ND7047 showed good promise and selection ND6962 some promise. All other selections showed little or no promise. Deficiencies were noted in most all selections in test weight, kernel size distribution, and semolina color.



TABLE 1

DURUM QUALITY EVALUATION

1975 CROP

VARIETY	STATE=MONTANA STATION=SIDNEY NURSERY=ADVANCED										DEFICIENCIES ^{3/}													SD ⁴	
	TW ^{1/} #/Bu	KW g	LG %	MD %	SM %	PR %	SEEX %	SP %	DU	VI	FR	RE %	VAL ^{2/}	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR		RE
DRYLAND																									
CROSBY	59.1	27.9	1	88	11	16.1	54.3	27	145				1	PB	MJ	MJ	MN								YS
WARD	59.9	37.3	22	68	10	15.3	55.6	37	140				3			MN	PB			MJ					YS
WELLS	61.2	29.9	4	88	8	15.6	52.3	33	130				1		MJ	MJ	PB		MN						YS
CROSBY	62.4	41.2	53	45	2	14.8	56.2	37	120				2							MJ	MJ				YS
WARD	62.3	46.7	63	35	2	15.4	57.0	50	125				1							MJ	PB				YS
WELLS	62.5	36.5	44	52	4	13.8	55.3	43	120				1							MJ	MJ				YS

1/ TW = Test weight; KW = 1000-Kernel weight; LG = Large kernels; MD = Medium kernels; SM = Small kernels;
 PR = Wheat protein (14% m.b.); SEEX = Semolina extraction; SP = Number of specks in semolina per 64.5
 sq cm; DU = Semolina color; VI = Spaghetti color; FR = Cooked spaghetti firmness in g cm; RE = Cooked
 spaghetti residue; MG = Milling deficiency based on percent semolina extraction.

2/ VAL = Final evaluation; 1 = No promise; 2 = Little promise; 3 = Some promise; 4 = Good promise.

3/ PB = Probable; MN = Minor; MJ = Major.

4/ SD = Standard; YS indicates standard.

TABLE 2

DURUM QUALITY EVALUATION ^{A/} 1975 CROP

STATE=OREGON STATION=PENDELTON NURSERY=ADVANCED																									
VARIETY	_TW_	_KW_	LG	ND	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
STANDARD BLEND	61.8	36.2	46	50	4	13.4	64.5		115				4												YS
CRANE	58.5	43.7	62	34	4	13.4	64.5		80				1	MN							MJ				
CRANE 'B'	58.5	45.5	65	32	3	12.8	65.0		80				1	MN							MJ				
GERARDO 565	58.5	46.3	68	29	3	12.9	64.0		75				1	MN							MJ				
GERARDO 574	56.5	41.5	55	41	4	15.0	65.5		100				1	MJ							MJ				
JURI 69	59.5	52.1	69	26	5	15.2	64.0		80				1	PB							MJ				
WANDELL	58.0	29.0	8	80	12	12.8	65.0		100				1	MJ	MJ	MJ	MJ				MJ				
D7114	62.0	43.1	22	75	3	11.2	63.5		80				1		MJ	MJ					MJ				
ID0086	58.0	31.7	8	81	11	13.1	66.0		100				1	MJ	MN	MJ	MN				MJ				
MD000136	60.5	43.5	21	77	2	12.7	66.0		80				1			MJ					MJ				
ND65023	55.0	36.6	32	61	7	13.2	66.0		95				1	MJ		MN	PB				MJ				
ND66151	58.0	39.1	43	50	7	13.9	66.5		105				2	MJ			PB				MJ				
T7205088	56.5	31.0	8	83	9	13.9	65.5		110				1	MJ	MN	MJ	MN				PB				

^{A/} See Table 1 for explanation of abbreviations and symbols.



TABLE 3
DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=WASHINGTON STATION=PULLMAN NURSERY=ADVANCED																										
VARIETY	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD	
STANDARD BLEND	61.8	36.2	46	50	4	13.4	62.0		115	7.0	8.12	4.7	4													
WANDELL	61.5	31.2	15	74	11	11.4	63.0		110	8.0	6.93	4.7	1													
ND006962	64.0	43.5	20	78	2	12.4	63.5		125	8.5	6.20	4.5	1													
CH725013	63.0	42.7	26	72	2	12.3	60.5		125	8.5	8.60	4.1	3													
CH725029	61.5	42.0	67	30	3	12.6	60.0		125	8.5	8.88	4.4	4													
CH725036	61.5	45.2	63	34	3	12.5	56.5		125	9.0	8.68	4.5	3													
T7400042	63.5	40.7	44	54	2	13.1	63.0		130	9.0	7.91	3.4	3													
MDDOC	65.0	43.1	75	24	1	12.0	56.5		115	8.5	9.35	4.0	3													
WANDELL #4	60.0	25.7	33	59	8	11.5	62.0		115	7.5	6.65	2.8	1													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9		115	8.0	6.22	4.4	3													
WANDELL #7	62.0	33.7	29	63	8	11.4	62.9																			



TABLE 4

DURUM QUALITY EVALUATION A/

1975 CRUP

STATE=WASHINGTON STATION=PULLMAN NURSERY=ADVANCED																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PK_	SEEX	SP	DU	_VI_	_FR_	RE_	VAL	_TW_	_KW_	LG	SM	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	RE_	SD
STANDARD BLEND	61.8	36.2	46	50	4	13.4	62.0		115				4												YS
QUILAFEN	66.0	40.7	65	33	2	11.5	63.5		120				4												
D7057*	63.0	38.0	43	52	5	12.2	65.0		120				4												
CH725023	62.0	43.9	65	32	3	12.5	60.6		120				4												
CH725034	61.0	44.8	65	33	2	12.4	58.9		125				3												
																									MN
13000093	62.5	42.6	66	32	2	12.0	59.0		120				3												
17305223	63.0	43.5	52	46	2	13.5	62.0		125				4												
17400050	61.0	38.9	51	48	1	12.2	61.7		120				4												
17573005	60.0	32.8	22	71	7	12.1	62.3		125				1	PB											
TLD-701-B	61.5	44.4	68	31	1	12.7	61.5		115				4												
WAG06185	62.0	36.1	31	64	5	11.7	58.3		120				3												
E7124043	61.0	35.0	26	67	7	12.5	62.0		125				3												
E7124064	61.5	39.1	39	57	4	11.4	62.0		115				4												
S.1 E7124074	63.5	38.0	36	61	3	12.5	62.0		125				4												
S.2 E7124074	63.0	42.0	55	43	2	11.6	61.0		115				4												
E7124113	62.5	38.0	37	61	2	11.3	65.0		125				4												
S.3 E7124114	63.0	39.1	39	58	3	10.9	60.0		125				4												
S.5 E7124114	64.0	40.8	43	54	3	12.1	63.0		120				4												
E7124122	62.5	38.0	31	66	3	12.2	61.0		125				3												
E7124131	63.5	41.5	51	46	3	11.9	63.0		125				4												
E7124134	64.5	41.7	48	51	1	11.8	58.4		130				3												
S.2 E7124141	61.0	34.5	28	68	4	12.0	63.0		130				3												
S.3 E7124141	63.0	34.5	22	75	3	11.0	63.0		130				1												
S.4 E7124141	62.0	34.1	17	78	5	11.2	63.0		130				1												
S.6 E7124141	64.5	37.5	37	61	2	11.9	57.6		125				3												
S.4 E7124142	64.0	36.9	27	70	3	11.8	59.0		130				3												
S.6 E7124142	64.0	39.1	38	59	3	12.3	58.4		125				3												
S.5 E7205051	64.5	46.5	73	26	1	12.8	64.0		125				4												
S.6 E7205021	63.5	43.1	63	36	1	12.5	64.0		125				4												
K6800707	63.0	40.3	50	48	2	12.4	62.0		125				4												
CH720106	60.5	43.1	48	50	2	12.2	60.0		115				4												
CH720112	60.5	44.8	63	34	3	12.2	60.5		120				4												
CH725039	60.5	42.9	64	34	2	12.6	62.3		115				4												
CH725041	61.0	44.1	62	36	2	12.6	61.3		125				4												
CH725106	63.0	45.2	61	37	2	12.4	59.0		120				3												

(CONT'D)



TABLE 4 (CONT'D)

DURLM QUALITY EVALUATION^{A/}

1975 CRUP

----- STATE=WASHINGTON STATION=PULLMAN NURSERY=ADVANCED -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
CH725169	60.0	45.0	58	39	3	12.2	60.5		120				4	PB											
71150151	61.0	43.5	65	32	3	12.2	58.0		125				3						MN						
71150153	62.0	43.7	62	36	2	12.2	55.4		115				3						MJ						
71150154	60.5	43.1	68	30	2	12.6	55.0		120				3						MJ						
71150155	62.0	42.0	69	29	2	12.1	59.0		120				3						MN						
71150156	63.0	46.5	67	31	2	11.3	54.3		125				1						MJ						
71150157	63.0	46.5	70	28	2	12.0	54.5		120				3						MJ						
71150158	62.5	48.3	74	24	2	11.6	51.0		120				1						MJ						
71150159	63.0	44.6	67	31	2	12.1	54.5		125				3						MJ						
71150164	61.5	46.9	69	29	2	12.2	59.0		125				3						MN						
71150165	62.0	42.7	68	30	2	12.2	55.0		125				3						MJ						
71150166	61.5	43.9	61	36	3	12.0	55.4		120				3						MJ						
71150170	62.0	40.0	49	47	4	12.2	54.5		120				3						MJ						
71150171	62.0	39.8	42	53	5	12.0	53.5		125				1						MJ						
71150172	62.0	42.4	52	43	5	12.4	53.5		125				1						MJ						
71150174	61.0	41.0	51	44	5	11.8	53.1		120				1						MJ						
71150199	60.5	43.1	62	35	3	12.4	53.0		120				1						MJ						
71150207	59.0	40.5	47	49	4	12.6	56.0		120				3	MN					MJ						
71150210	59.5	43.3	54	42	4	12.3	56.0		110				3	PB					MJ						PB
71150212	60.0	45.7	53	38	3	12.1	56.6		110				3	PB					MJ						PB
71150213	59.0	44.2	53	42	5	12.2	54.7		115				3	MN					MJ						
71150215	59.5	41.7	57	39	4	11.3	56.6		115				3	PB					MJ						
77500361	63.5	37.5	50	48	2	12.5	61.0		115				4												
77500370	63.0	41.8	47	52	1	13.0	61.1		125				4												
77500371	63.0	42.4	46	52	2	12.9	60.0		125				4						PB						
77500374	63.0	46.5	69	31	0	13.0	60.0		110				3						PB						
77500382	62.5	46.1	53	46	1	12.1	62.5		125				4												
77500391	63.5	43.3	58	41	1	13.2	62.5		110				3												PB
77500420	60.5	35.6	24	69	7	12.1	62.5		120				1			MJ									
77500427	64.0	43.1	61	38	1	12.5	61.5		125				4												
77500430	64.0	42.2	57	42	1	12.0	61.0		130				4												

^{A/} See Table 1 for explanation of abbreviations and symbols.



DURUM QUALITY EVALUATION^{A/}

1975 CROP

TABLE 5

STATE=NORTH_DAKOTA STATION=WILLISTON NURSERY=FIELD-PLOT																									
VARIETY	_TW_	_KW_	_LG_	_MO_	_SM_	_PR_	_SEEX_	_SP_	_DU_	_VI_	_FR_	_RE_	_VAL_	_TW_	_KW_	_LG_	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	_SD_
CROSBY	60.1	33.1	4	82	14	16.7	51.7	13		9.5	4.99	6.2	4				MN							YS	
LEEDS	63.2	33.4	11	83	6	16.4	51.3	10		9.5	4.89	5.6	4					PB						YS	
ROLETTE	60.7	31.5	3	89	8	16.4	54.0	5		9.5	4.33	6.7	4										PB	YS	
WARD	60.7	31.8	8	85	7	16.1	54.4	3		9.5	5.53	7.3	4											YS	
WELLS	62.4	30.4	7	85	8	14.7	52.1	10		9.0	4.15	6.1	4			PB							PB	YS	
80TNO	59.4	31.9	2	88	10	17.2	52.2	20		9.0	4.71	6.8	4			PB	PB	PB							
MACOUN	61.0	35.6	31	65	4	16.0	51.6	17		9.5	5.37	5.8	4												
RUGBY	60.8	34.5	9	85	6	15.3	52.8	13		9.0	4.75	6.5	4												
WAKOOMA	60.7	33.8	3	89	8	16.3	52.4	13		9.5	5.31	5.8	4												
D6962	61.6	31.0	3	89	8	15.9	50.7	20		9.0	5.27	6.3	4			PB			PB						
D7047	59.8	27.9	2	82	16	16.8	51.2	20		9.5	4.49	5.9	3			PB	MN	PB	PB	MJ			PB		
D7057	58.6	25.4	1	82	17	17.0	52.9	20		9.0	3.96	6.0	3			MN	MJ	PB	MJ				MN		
D7131	61.4	43.3	55	44	1	15.2	53.3	17		9.5	4.37	6.0	4										PB		
D7158	59.0	27.6	1	79	20	16.6	51.9	10		9.0	4.51	7.3	1			PB	MN	PB	MJ				PB		
D7169	56.7	27.0	1	77	22	15.3	51.8	27		9.5	4.15	6.8	1			MJ	MN	PB	MJ				PB		
D7175	60.8	36.2	7	90	3	16.7	52.7	7		9.0	5.37	7.1	4												
D71101	59.8	31.2	2	86	12	16.1	53.3	13		9.0	4.77	6.2	4			PB	PB	PB	PB						
D71110	59.0	28.2	1	86	13	17.3	50.6	7		9.0	4.19	6.3	3			PB	MN	PB	MN				PB		
D71111	59.1	31.0	2	86	12	17.1	51.2	13		9.5	5.03	5.5	4			PB	PB	PB	PB				PB		
D71117	57.9	30.5	2	85	13	17.6	51.7	17		8.5	5.41	5.0	3			MJ	PB	PB	MN			PB			
D71121	59.3	32.4	3	87	10	17.0	53.4	20		8.5	4.85	5.3	4			PB			PB						
D7233	59.8	33.7	5	77	18	17.0	51.7	20		9.5	4.79	5.8	3			PB			MJ						
D72108	60.8	34.2	11	84	5	16.0	54.2	20		9.5	5.13	5.8	4												
D72110	60.2	33.4	7	88	5	16.4	52.5	13		10.0	4.71	5.6	4												
D72114	61.4	35.6	35	63	2	16.0	53.2	13		9.5	4.04	5.9	4												
DT411	60.5	34.8	12	81	7	15.4	52.0	7		9.5	5.05	5.3	4											PB	

A/ See Table 1 for explanation of abbreviations and symbols.
B/ Cooking time of 20 min. and an ideal score of 5.



TABLE 5

DURUM QUALITY EVALUATION ^{A/}

1975 CROP

----- STATE=NORTH_DAKOTA STATION=WILLISTON NURSERY=FIELD-PLOT -----																										
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	B/	_RE_	VAL	_TW	_KW	LG	SM	_PR	_MG	_SP	_DU	_VI	_FR	_RE	SD
CROSBY	60.1	33.1	4	82	14	16.7	51.7	13		9.5	4.99	6.2	4					MN							YS	
LEEDS	63.2	33.4	11	83	6	16.4	51.3	10		9.5	4.89	5.6	4						PB						YS	
ROLETTE	60.7	31.5	3	89	8	16.4	54.0	5		9.5	4.33	6.7	4											PB	YS	
WARD	60.7	31.8	8	85	7	16.1	54.4	3		9.5	5.53	7.3	4												YS	
WELLS	62.4	30.4	7	85	8	14.7	52.1	10		9.0	4.15	6.1	4			PB								PB	YS	
BOITNO	59.4	31.9	2	88	10	17.2	52.2	20		9.0	4.71	6.8	4			PB		PB								
MACOUN	61.0	35.6	31	65	4	16.0	51.6	17		9.5	5.37	5.8	4													
RUGBY	60.8	34.5	9	85	6	15.3	52.8	13		9.0	4.75	6.5	4													
WAKOOMA	60.7	33.8	3	89	8	16.3	52.4	13		9.5	5.31	5.8	4													
D6962	61.6	31.0	3	89	8	15.9	50.7	20		9.0	5.27	6.3	4			PB			PB							
D7047	59.8	27.9	2	82	16	16.8	51.2	20		9.5	4.49	5.9	3			PB	MN	PB	MJ					PB		
D7057	58.6	25.4	1	82	17	17.0	52.9	20		9.0	3.96	6.0	3			MN	MJ	PB	MJ					MN		
D7131	61.4	43.3	55	44	1	15.2	53.3	17		9.5	4.37	6.0	4											PB		
D7158	59.0	27.6	1	79	20	16.6	51.9	10		9.0	4.51	7.3	1			PB	MN	PB	MJ					PB		
D7169	56.7	27.0	1	77	22	15.3	51.8	27		9.5	4.15	6.8	1			MJ	MN	PB	MJ					PB		
D7175	60.8	36.2	7	90	3	16.7	52.7	7		9.0	5.37	7.1	4													
D71101	59.8	31.2	2	86	12	16.1	53.3	13		9.0	4.77	6.2	4			PB	PB	PB	PB							
D71110	59.0	28.2	1	86	13	17.3	50.6	7		9.0	4.19	6.3	3			PB	MN	PB	MN					PB		
D71111	59.1	31.0	2	86	12	17.1	51.2	13		9.5	5.03	5.5	4			PB	PB	PB	PB					PB		
D71117	57.9	30.5	2	85	13	17.6	51.7	17		8.5	5.41	5.0	3			MJ	PB	PB	MN					PB		
D71121	59.3	32.4	3	87	10	17.0	53.4	20		8.5	4.85	5.3	4			PB		PB								
D7233	59.8	33.7	5	77	18	17.0	51.7	20		9.5	4.79	5.8	3			PB		MJ								
D72108	60.8	34.2	11	84	5	16.0	54.2	20		9.5	5.13	5.8	4													
D72110	60.2	33.4	7	88	5	16.4	52.5	13		10.0	4.71	5.6	4													
D72114	61.4	35.6	35	63	2	16.0	53.2	13		9.5	4.04	5.9	4													
D7411	60.5	34.8	12	81	7	15.4	52.0	7		9.5	5.05	5.3	4													

A/ See Table 1 for explanation of abbreviations and symbols.

B/ Cooking time of 20 min. and an ideal score of 5.



TABLE 6

DURUM QUALITY EVALUATION^{A/}
1975 CROP

STATE=NORTH_DAKOTA STATION=DICKINSON NURSERY=FIELD-PLOT																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	B/ _RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
CROSBY LEEDS ROLETTE WARD HELLS	61.5	40.8	28	70	2	15.3	54.7	20		9.0	3.58	7.3	3											MN	YS
	62.8	39.2	32	63	5	15.3	52.0	20		9.0	4.53	6.3	4				PB		PB					MN	YS
	61.8	40.7	43	55	2	15.5	53.8	3		9.0	4.47	6.4	4										PB	YS	
	60.8	38.6	32	67	1	14.3	55.6	13		9.5	4.51	6.3	4											YS	
	60.6	30.7	8	87	5	14.7	52.0	13		9.0	4.07	6.5	1		MJ	MJ	PB		PB				PB	YS	
BUTNO MACOUN RUGBY WAKOUMA D6962	61.2	39.8	20	78	2	14.3	56.0	23		8.5	4.11	6.9	3			MN							PB	PB	
	60.7	37.9	37	61	2	14.4	55.9	33		9.0	4.89	5.6	4						MN						
	60.0	38.0	34	63	3	14.2	56.3	13		9.5	3.60	6.9	3		PB								MN		
	60.0	40.5	22	77	1	14.3	54.1	20		9.0	4.00	7.3	4		PB	P3							PB	PB	
	61.8	39.5	29	69	2	14.6	53.5	17		9.0	4.43	5.6	4											PB	
D7047 D7057 D7131 D7158 D71110	62.2	37.3	21	77	2	14.1	56.6	17		9.0	2.98	7.3	1				PB							MJ	
	61.3	38.6	18	80	2	13.1	55.2	17		9.0	4.17	6.7	4			MN							PB		
	60.1	49.8	70	28	2	15.1	55.2	23		9.0	4.00	6.5	4										PB		
	61.7	37.7	24	74	2	13.3	57.5	20		9.0	4.25	6.0	4			PB							PB		
	60.7	35.7	33	64	3	14.1	55.7	23		9.0	3.68	6.0	3		PB								MN		
D71111 D71117 D7233 D72110 D72114 D7411	60.6	40.8	39	58	3	13.9	56.6	23		9.0	3.02	6.7	3											MJ	
	61.0	42.2	51	47	2	14.3	53.3	17		9.0	3.74	6.1	3										MN		
	61.0	42.9	50	48	2	15.2	53.4	13		9.0	3.14	7.1	3										MJ		
	61.1	37.7	46	51	3	15.6	52.2	17		9.5	4.11	6.0	4						PB				PB		
	60.7	41.8	70	28	2	14.9	50.5	10		8.5	3.50	6.0	3						MN			PB	MN	MN	

A/ See Table 1 for explanation of abbreviations and symbols.

B/ Cooking time of 20 min. and an ideal score of 5.



TABLE 7

DURUM QUALITY EVALUATION ^{A/}

1975 CROP

----- STATE=CALIFORNIA STATION=DELTA NURSERY=FIELD-PLOT -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	RE_	VAL	_TW_	_KW_	LG	SM	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	RE_	SD
STANDARD BLEND	61.8	36.2	46	50	4	13.4	57.1	40	135				3							MJ					YS
ENT.1	61.7	41.3	50	48	2	14.2	54.7	20	140				4						PB						
ENT.3	63.5	41.0	62	36	2	13.6	57.3	23	120				1										MJ		
ENT.4	62.8	40.3	34	64	2	14.3	56.8	20	135				4			MN									
ENT.6	64.3	45.7	68	31	1	13.4	56.9	20	120				1										MJ		
ENT.7	62.9	39.5	53	45	2	13.6	56.2	30	140				4							MN					
ENT.10	62.4	38.9	30	68	2	13.8	57.7	23	125				3			MJ							MJ		
ENT.13	60.7	42.0	48	49	3	13.0	59.0	23	90				1										MJ		
ENT.14	62.9	38.9	34	64	2	13.6	57.2	20	130				3			MN							PB		
ENT.15	59.6	34.4	31	66	3	13.7	57.3	23	105				1		PB	MJ							MJ		
ENT.21	62.2	33.8	9	87	4	14.7	55.1	23	125				1		PB	MJ			PB				MJ		
ENT.22	64.9	39.4	55	42	3	13.4	56.8	23	125				3										MJ		
ENT.24	61.8	43.5	69	30	1	13.6	57.6	20	110				1										MJ		
ENT.25	63.8	43.7	54	44	2	13.4	58.0	13	125				3										MJ		
ENT.26	63.7	44.1	70	29	1	13.6	56.5	27	135				4												
ENT.27	64.0	44.8	60	39	1	13.2	59.4	13	125				3										MJ		
ENT.28	62.7	43.3	56	42	2	13.2	58.7	20	120				1										MJ		
ENT.162	61.7	37.2	51	47	2	13.7	56.5	23	95				1										MJ		
STANDARD BLEND	61.8	36.2	46	50	4	13.4	57.1	40	135				3							MJ			PB		YS
ENT.5	64.6	43.9	62	37	1	13.4	57.9	20	140				3										MN		
ENT.9	63.0	41.7	51	47	2	13.7	56.1	23	125				3										MJ	PB	
ENT.17	62.9	39.7	37	61	2	14.2	56.9	23	140				4			MN									
ENT.23	62.4	40.3	45	52	3	13.9	55.7	17	145				3										PB	MJ	

^{A/} See Table 1 for explanation of abbreviations and symbols.

TABLE 8

DURUM QUALITY EVALUATION^{A/}

1975 CRJP

----- STATE=CALIFORNIA STATION=EL-CENTRO NURSERY=FIELD-PLUT -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	--TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
LEEDS	63.0	35.3	26	71	3	11.8	56.5	60	135				1							MJ				YS	
COCURIT 71	60.9	45.8	66	32	2	11.1	56.9	40	90				1	PB						MJ					
CRANE 'S.	61.9	48.5	31	67	2	11.2	59.6	37	95				1							MJ					
JORI 59	61.2	54.1	79	19	2	12.6	57.7	47	100				1	PB						MJ					
PRODURA	63.4	50.8	77	21	2	11.3	60.9	43	95				1							MJ					
PURI DURUM	64.0	46.3	77	22	1	12.6	58.8	40	120				1							MJ					
SENTRY	62.4	36.5	36	61	3	11.6	57.0	53	125				1							MJ					
ND6655	61.9	42.0	50	47	3	10.8	58.7	33	120				1							MN					
TL-2909	63.4	45.0	77	22	1	11.5	57.1	37	130				3							MJ					
TL-2911	61.8	37.6	21	75	4	11.3	61.7	67	130				1			PB				MJ					
TL-2912	60.0	36.9	30	67	3	12.1	59.1	37	135				3	MN						MJ					
TL-2913	61.9	38.2	39	59	2	12.5	57.6	33	140				4							MN					
TL-2914	62.2	37.3	41	57	2	11.9	58.6	37	135				3							MJ					
TL-2916	61.8	48.3	68	30	2	11.8	58.8	40	125				2							MJ					
TL-2917	62.0	52.9	78	20	2	12.0	61.8	43	115				1							MJ					
TL-2918	61.6	43.1	65	33	2	11.7	56.9	30	140				4							MN					
TL-2919	60.2	28.4	38	58	4	11.3	59.1	33	130				3	MN	MJ					MN					
68045	60.1	42.7	64	34	2	12.6	59.0	47	130				1	MN						MJ					
68047	60.8	35.5	24	70	6	11.7	58.9	43	125				1	PB			PB			MJ					
66058	62.0	40.8	47	51	2	12.6	60.0	27	130				4							PB					
69483	63.8	42.6	40	58	2	11.3	60.4	40	135				3							MJ					
69484	62.2	42.0	58	40	2	11.7	59.3	33	135				4							MN					
69486	62.5	43.9	64	34	2	11.2	58.4	30	120				1							MN					
STANDARD BLEND	61.8	36.2	46	50	4	13.4	57.1	40	135				8	7.02	1.6					MJ				YS	
TL-2910	58.9	42.2	58	40	2	12.5	60.9	60	135				9	7.52	4.6					MJ				MN	

^{A/} See Table 1 for explanation of abbreviations and symbols.



TABLE 9

DURUM QUALITY EVALUATION^{A/} 1975 CROP

----- STATE=WASHINGTON STATION=PULLMAN NURSERY=INTERNATIONAL -----																									
VARIETY	_TW_	_KW_	LG	ND	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	_LG_	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
LEEDS	63.0	43.7	70	29	1	12.6	64.0		125				4												YS
ROLETTE	63.5	44.1	71	28	1	12.8	63.5		125				4												YS
WARD	63.0	42.4	58	40	2	12.0	63.5		120				3			MN									YS
ALIFEN	62.5	42.0	65	34	1	13.7	63.0		120				3			PB									PB
CRANE "S"	64.0	46.9	72	27	1	13.0	64.5		125				4												
GERARDO 575	64.0	44.1	64	34	2	11.8	64.0		115				3												MN
MERCULES	64.0	45.2	68	31	1	12.8	64.0		120				3												PB
JUPATECO 73	63.0	30.2	60	39	1	12.4	62.5		115				1			NJ									MN
PARANA 66/270	64.5	43.1	69	30	1	13.8	63.5		120				3												PB
QUILAFEN	63.5	29.8	65	34	1	12.3	63.0		125				1			MJ									
WANDELL	64.0	44.2	71	28	1	12.9	63.5		120				3												PB

^{A/} See Table 1 for explanation of abbreviations and symbols.

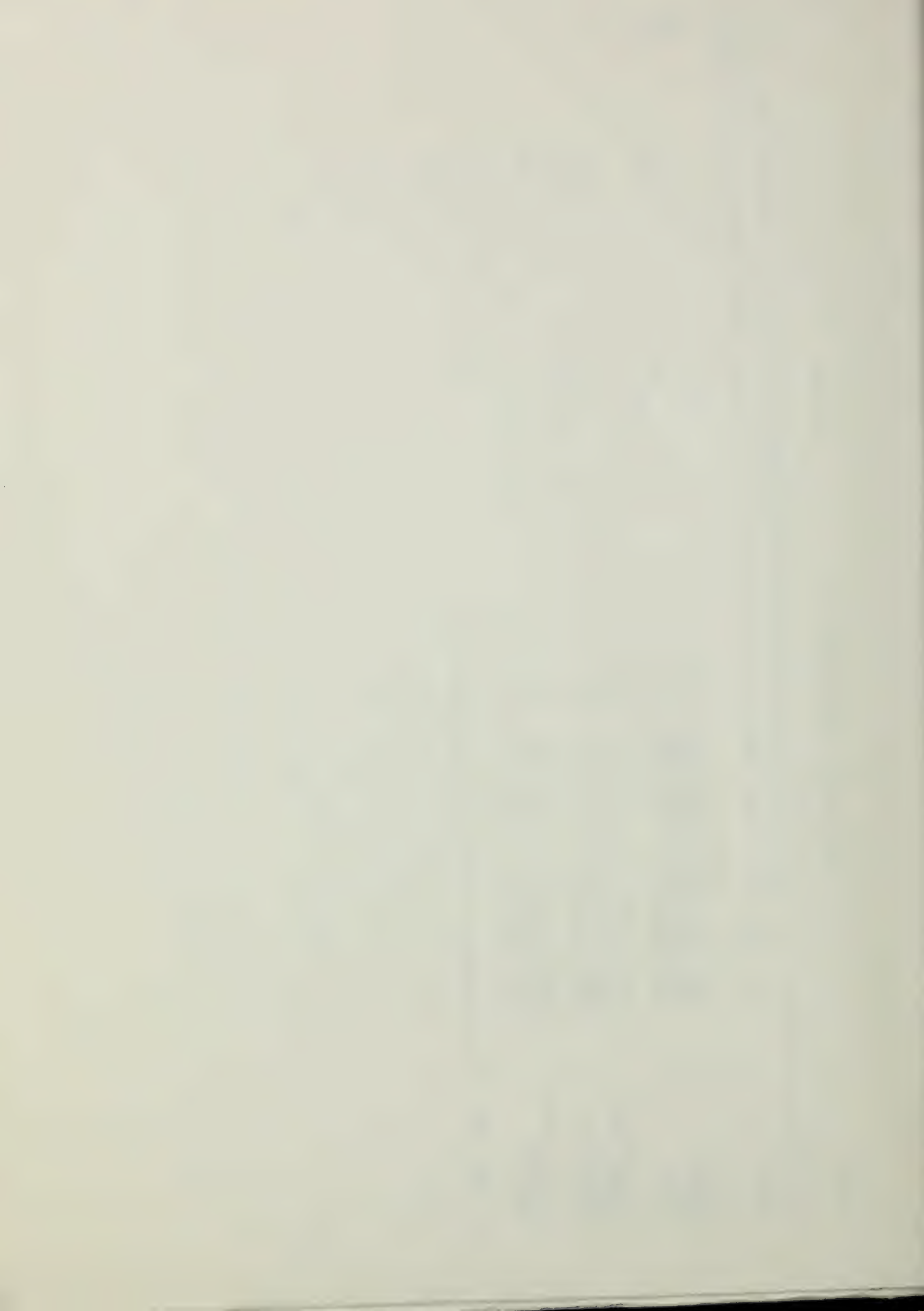


TABLE 10

DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=CALIFORNIA STATION=DELTA NURSERY=PRELIMINARY

VARIETY	_TW_	_KW_	LG	WD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	RE	SD
LEEDS	62.0	34.8	23	74	3	15.2	58.3		125				4												YS
ENT122 ANZA	63.0	28.9	10	83	7	12.1	66.3		60				1		MJ	MN	PB								MJ
ENT177 ANZA	63.0	28.2	7	86	7	12.2	66.3		60				1		MJ	MJ	PB								MJ
ENT59 COCORIT 71	60.0	41.5	46	51	3	12.8	60.6		80				1	PB											MJ
ENT179 COCORIT 71	59.5	40.0	39	57	4	13.0	61.3		80				1	PB											MJ
CRANE B	58.5	37.3	28	69	3	13.9	56.0		95				1	MJ				PB							MJ
OVIACHIE 65	58.5	36.8	29	66	5	14.2	58.0		105				1	MJ			PB								MJ
ENT121 ND6655	62.0	38.9	25	72	3	13.4	62.3		120				3												PB
ENT178 ND6655	61.5	38.2	25	72	3	13.6	62.3		115				2												MJ
ENT1	62.0	37.2	40	57	3	14.4	57.1		130				4												
ENT3	62.5	35.6	13	81	6	13.6	60.6		115				2			MN	PB								MJ
ENT5	63.0	38.2	33	64	3	14.0	54.9		125				3					MN							
ENT6	63.5	37.9	36	62	2	13.5	53.1		125				3					MJ							
ENT8	62.5	45.5	63	35	2	14.1	54.9		105				1					MN							MJ
ENT11	63.0	46.7	73	26	1	14.8	57.1		110				1												MJ
ENT16	62.5	45.2	43	55	2	13.3	60.0		110				1												MJ
ENT17	62.0	37.5	22	75	3	13.1	59.4		95				1												MJ
ENT18	61.5	36.4	26	70	4	12.8	60.6		95				1												MJ
ENT20	62.5	38.6	35	62	3	13.2	58.9		105				1												MJ
ENT21	63.0	42.9	46	53	1	13.9	57.7		110				1												MJ
ENT25	60.0	34.7	13	82	5	14.7	56.0		125				4	PB			MN	PB							PB
ENT31	62.5	38.5	45	52	3	13.4	58.9		100				1												MJ
ENT32	63.5	42.6	57	41	2	13.6	54.9		105				1					MN							MJ
ENT33	63.0	41.7	49	49	2	12.8	56.6		100				1					PB							MJ
ENT34	62.0	40.7	41	56	3	13.3	56.6		115				2					PB							MJ
ENT36	61.0	39.1	25	72	3	13.8	56.7		110				1												MJ
ENT41	61.5	35.6	15	80	5	13.1	56.6		120				3				PB	PB							PB
ENT43	60.0	35.7	9	84	7	13.5	58.3		105				1	PB			MN	PB							MJ
ENT44	61.0	36.5	22	75	3	14.4	60.0		115				2												MJ
ENT45	60.5	38.5	25	72	3	13.6	58.3		120				3	PB											PB
ENT46	60.5	38.8	23	74	3	13.2	61.7		105				1	PB											MJ
ENT53	60.5	35.0	12	83	5	14.1	59.5		115				2	PB			MN	PB							MJ
ENT54	61.0	37.0	24	72	4	14.2	57.1		115				2												MJ
ENT55	62.0	40.0	52	47	1	13.7	59.4		110				1												MJ
ENT57	62.0	36.0	9	86	5	13.1	56.6		110				1				MN	PB							MJ

(CONT'D)



TABLE 10 (CONT'D)

DURUM QUALITY EVALUATION^{A/}

1975 CRUP

STATE=CALIFORNIA STATION=DELTA NURSERY=PRELIMINARY																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	LG	SM	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
ENT61	60.5	36.9	13	82	5	13.5	55.4		100				1	PB		MN	PB		MN		MJ				
ENT62	62.0	41.0	39	58	3	14.1	62.9		105				1								MJ				
ENT64	61.5	42.6	32	65	3	13.5	58.9		110				1								MJ				
ENT69	61.0	42.9	47	51	2	13.5	55.4		115				2			MN				MJ					
ENT70	60.5	39.8	41	56	3	13.7	56.0		115				2	PB		PB				MJ					
ENT73	63.0	37.7	21	76	3	13.0	58.9		115				2								MJ				
ENT76	62.5	35.0	21	76	3	13.0	58.3		115				2								MJ				
ENT77	61.0	41.0	37	60	3	14.2	54.9		115				2			MN				MJ					
ENT78	61.0	38.9	31	66	3	14.2	56.0		120				3			PB				PB					
ENT79	59.5	35.7	17	78	5	14.0	54.3		110				1	PB		PB	PB		MJ		MJ				
ENT92	61.5	42.9	55	43	2	13.6	54.0		105				1			MJ					MJ				
ENT98	61.0	36.0	29	66	5	13.8	55.4		105				1			MN				MJ					
ENT101	59.5	38.2	31	66	3	13.9	55.4		110				1	PB		MN					MJ				
ENT103	60.5	41.8	43	55	2	13.5	57.1		100				1	PB						MJ					
ENT107	62.0	38.3	30	67	3	13.5	60.0		110				1								MJ				
ENT108	59.5	39.5	37	59	4	13.4	59.4		125				4	PB											
ENT109	61.0	38.2	35	62	3	13.0	58.3		100				1								MJ				
ENT110	61.5	41.0	41	56	3	12.8	57.7		100				1								MJ				
ENT113	60.5	44.6	56	42	2	13.2	58.9		90				1	PB						MJ					
ENT123	60.0	42.6	50	48	2	13.5	57.1		105				1	PB						MJ					
ENT125	63.0	43.5	43	55	2	14.1	60.0		115				2								MJ				
ENT126	62.0	39.4	28	69	3	14.1	57.1		115				2								MJ				
ENT127	62.0	43.7	45	53	2	14.3	59.4		110				1								MJ				
ENT128	63.0	45.5	47	52	1	13.6	60.0		110				1								MJ				
ENT129	62.5	42.9	37	61	2	13.6	56.6		115				2					PB			MJ				
ENT130	63.0	41.5	35	62	3	13.7	57.1		110				1								MJ				
ENT131	63.0	42.7	42	56	2	13.8	57.1		115				2								MJ				
ENT132	62.5	40.0	30	67	3	13.2	57.7		115				2								MJ				
ENT133	63.0	41.3	35	62	3	13.5	57.7		115				2								MJ				
ENT134	62.5	35.1	19	77	4	13.6	56.0		120				3					PB			PB				
ENT135	62.0	39.2	29	68	3	13.9	56.0		115				2					PB			MJ				
ENT136	63.5	38.3	35	62	3	13.5	56.0		120				3					PB			PB				
ENT137	64.0	44.4	46	51	3	14.1	57.7		115				2								MJ				
ENT138	62.5	43.3	46	52	2	14.3	58.3		115				2								MJ				
ENT139	63.5	43.3	46	52	2	13.3	56.6		120				3					PB			PB				

(CONT'D)



TABLE 10 (CONT'D)

DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=CALIFORNIA STATION=DELTA NURSERY=PRELIMINARY																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
ENT140	63.0	29.8	53	46	1	14.0	57.7		110				1		MN						MJ				
ENT141	62.5	40.2	31	66	3	13.7	59.3		120				3								PB				
ENT143	62.5	40.2	29	68	3	13.5	58.9		125				4												
ENT144	62.0	44.4	55	43	2	14.6	56.7		120				3						PB		PB				
ENT147	63.0	40.8	40	58	2	14.0	59.4		115				2								MJ				
ENT148	60.5	34.4	13	80	7	14.4	58.7		115				2	PB		MN	PB				MJ				
ENT149	61.5	37.3	18	79	3	13.7	58.7		115				2			PB					MJ				
ENT150	61.0	36.5	17	77	6	13.9	58.9		110				1			PB	PB				MJ				
ENT152	60.5	36.4	27	69	4	13.4	58.7		110				1	PB							MJ				
ENT153	61.5	35.5	15	80	5	13.5	59.3		110				1			PB	PB				MJ				
ENT158	60.5	36.6	27	70	3	12.1	54.0		80				1	PB					MJ		MJ				
ENT161	62.5	39.2	37	60	3	13.9	56.0		95				1						PB		MJ				
ENT162	62.5	38.0	32	65	3	14.4	60.6		110				1								MJ				
ENT164	61.5	48.8	69	30	1	13.5	59.4		90				1								MJ				
ENT168	61.0	39.5	27	67	6	14.1	56.0		110				1						PB		MJ				
ENT172	62.0	37.7	27	68	5	14.4	56.6		95				1						PB		MJ				
ENT175	60.5	44.8	51	46	3	14.0	57.3		100				1	PB							MJ				
ENT176	60.5	41.3	47	50	3	14.1	57.3		95				1	PB							MJ				
STANDARD BLEND	61.8	36.2	46	50	4	13.4	55.5		115	7.5	6.83	2.9	3												YS
ENT7	62.5	42.7	48	50	2	12.8	57.0		120	9.0	9.50	3.4	3												MJ
ENT13	61.5	36.2	13	82	5	13.2	60.0		115	8.0	7.95	5.0	1												MN
ENT111	62.0	42.7	53	44	3	12.0	59.4		105	6.0	8.23	3.0	3								MJ	MJ			
ENT116	60.5	43.3	54	44	2	14.4	56.0		120	8.0	8.45	3.7	3												MJ

^{A/} See Table 1 for explanation of abbreviations and symbols.



TABLE 11

DURUM QUALITY EVALUATION^{A/}

1975 CROP

----- STATE=WASHINGTON STATION=ROYAL_SLOPE NURSERY=PRELIMINARY -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	LG	SM	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
T7400108	63.0	38.5	46	53	1	13.1	52.8		125				1	MN	MJ				MJ						
T7500442	65.0	41.7	63	36	1	12.7	59.2		120				3	PB					MJ						
T7500445	64.5	43.1	55	44	1	12.6	61.0		120				3		MN				PB						
T7500446	64.5	41.7	61	38	1	13.1	61.0		125				4		PB				PB						
T7500449	62.5	36.6	31	66	3	11.7	58.7		105				1	MN	MJ		PB		MJ						
T7500472	64.5	41.2	50	45	1	12.8	60.0		120				3	PB					MN						
T7500473	65.0	44.4	57	42	1	12.1	60.0		120				3		MN				MN						
T7500474	65.0	46.9	66	33	1	13.1	57.6		115				2						MJ						
T7500475	64.5	46.7	58	41	1	13.0	61.0		110				1		MN				PB						
T7500477	64.5	43.3	62	37	1	12.8	58.4		110				1		PB				MJ						
T7500478	64.5	44.8	64	35	1	12.5	62.0		110				1						PB						
T7500479	65.5	46.5	64	36	0	12.4	61.0		115				3						PB						
T7500480	65.0	46.1	69	30	1	12.1	59.0		105				1						MJ						
T7500542	65.0	47.1	74	26	0	13.2	59.0		115				2						MJ						
T7500547	63.5	49.0	78	22	0	13.3	60.0		110				1						MN						
T7500550	64.0	46.5	59	41	0	13.1	58.4		125				3			PB			MJ						
T7500551	64.5	45.7	59	40	1	11.7	59.2		120				3			PB			MJ						
T7500558	65.0	46.9	78	22	0	11.8	61.6		110				1						PB						
T7500564	61.5	40.5	65	34	1	10.2	60.0		110				1	PB	PB				MN						
T7500566	65.0	48.8	79	21	0	11.6	60.0		115				2						MN						
T7500568	64.0	39.7	55	44	1	11.7	60.0		115				2		MN	MN			MN						
STANDARD BLEND	61.8	36.2	46	50	4	13.4	55.5		115				3												YS
ALTYN BUGDAJ	63.5	44.2	79	20	1	11.6	61.6		100				1						MJ						MJ
CANDEAL BONAENVENSE 20	64.0	45.7	81	19	0	12.7	56.8		105				2						MJ						MJ
CANDEAL SEL LAPREVISI	62.5	45.2	65	34	1	12.6	55.2		105				1						MJ						MJ
CRESO	64.0	50.0	76	23	1	11.3	54.4		85				1						MJ						MN
KAMYSINSKO JA 3	64.5	40.7	71	28	1	11.8	60.0		60				1						MJ						MJ
MALANUPUS 7	62.0	46.5	79	20	1	11.9	54.4		100				1						MJ						MN
MIMIDA	64.5	49.0	80	19	1	10.8	56.0		85				1						MJ						MN
CTB1425	63.5	47.6	83	16	1	12.8	53.6		100				1						PB						MJ
CTC422	63.0	50.3	85	15	0	12.5	55.0		105				1						MJ						MN
CTC430	61.0	47.6	73	27	0	13.1	52.0		100				1						MN						MJ
D7175	62.5	47.8	75	25	0	12.1	58.4		130				4												MN
FR905	62.0	54.6	89	11	0	14.2	57.0		90				1						MJ						MN

^{A/} See Table 1 for explanation of abbreviations and symbols.

TABLE 12

DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=MINNESOTA STATION=CROOKSTON NURSERY=UNIFORM																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	RE	SD
CROSBY	63.0	35.3	23	73	4	14.0	64.0		115				4											YS	
LEEDS	64.0	35.2	17	80	3	13.9	66.0		115				4											YS	
ROLETTE	63.0	37.3	3	92	5	14.4	67.5		115				4			MN								YS	
WARD	62.0	39.4	31	65	4	12.8	62.4		125				4						PB					YS	
WELLS	59.5	26.8	3	82	15	14.1	62.3		115				3	MN	MJ	MN	MJ		PB					YS	
BUTNO	62.0	35.6	16	78	6	14.0	67.0		120				4												
MACOUN	60.0	33.7	25	69	6	13.8	62.5		120				4	PB	PB			PB							
MINDUM	62.0	32.8	11	79	10	12.6	65.0		105				1		PB	PB	PB				MJ				
RUGBY	62.5	36.9	23	72	5	12.3	66.0		120				4												
WAKUOMA	60.0	32.9	7	85	8	15.3	61.5		120				3	PB	PB	MN	PB		MN						
D6962	64.0	38.3	36	62	2	13.5	65.0		125				4												
D7047	62.5	40.8	34	63	3	13.0	66.0		120				4												
D7057	60.5	32.5	11	83	6	13.0	63.5		120				4	PB	PB	PB									
D7131	61.5	43.5	58	40	2	13.7	68.5		125				4												
D7158	61.2	34.2	11	82	7	14.3	64.0		120				4												
D7169	61.0	36.5	17	78	5	11.9	66.5		120				4												
D7175	61.0	38.5	17	80	3	13.8	65.5		135				4												
D71101	62.0	35.0	23	73	4	14.4	66.0		120				4												
D71110	62.0	36.6	27	68	5	13.6	66.0		110				3								MN				
D71111	61.0	34.0	16	78	6	13.5	65.1		120				4												
D71117	62.0	35.3	21	74	5	13.2	67.5		120				4												
D71121	61.5	35.3	27	68	5	13.5	66.2		120				4												
D7233	63.0	38.8	38	59	3	13.3	67.5		125				4												
D7266	61.5	34.5	15	79	6	14.2	65.1		120				4												
D7268	61.0	31.1	9	82	9	13.2	61.5		120				3			MN	PB	PB		MN					
D72108	61.0	36.4	19	75	6	14.1	66.5		120				4												
D72110	62.0	32.6	17	80	3	14.4	64.0		130				4			PB									
D72114	62.5	39.4	47	51	2	14.4	62.5		120				4										PB		
D7411	61.0	36.1	23	72	5	13.6	65.5		120				4												

^{A/} See Table 1 for explanation of abbreviations and symbols.

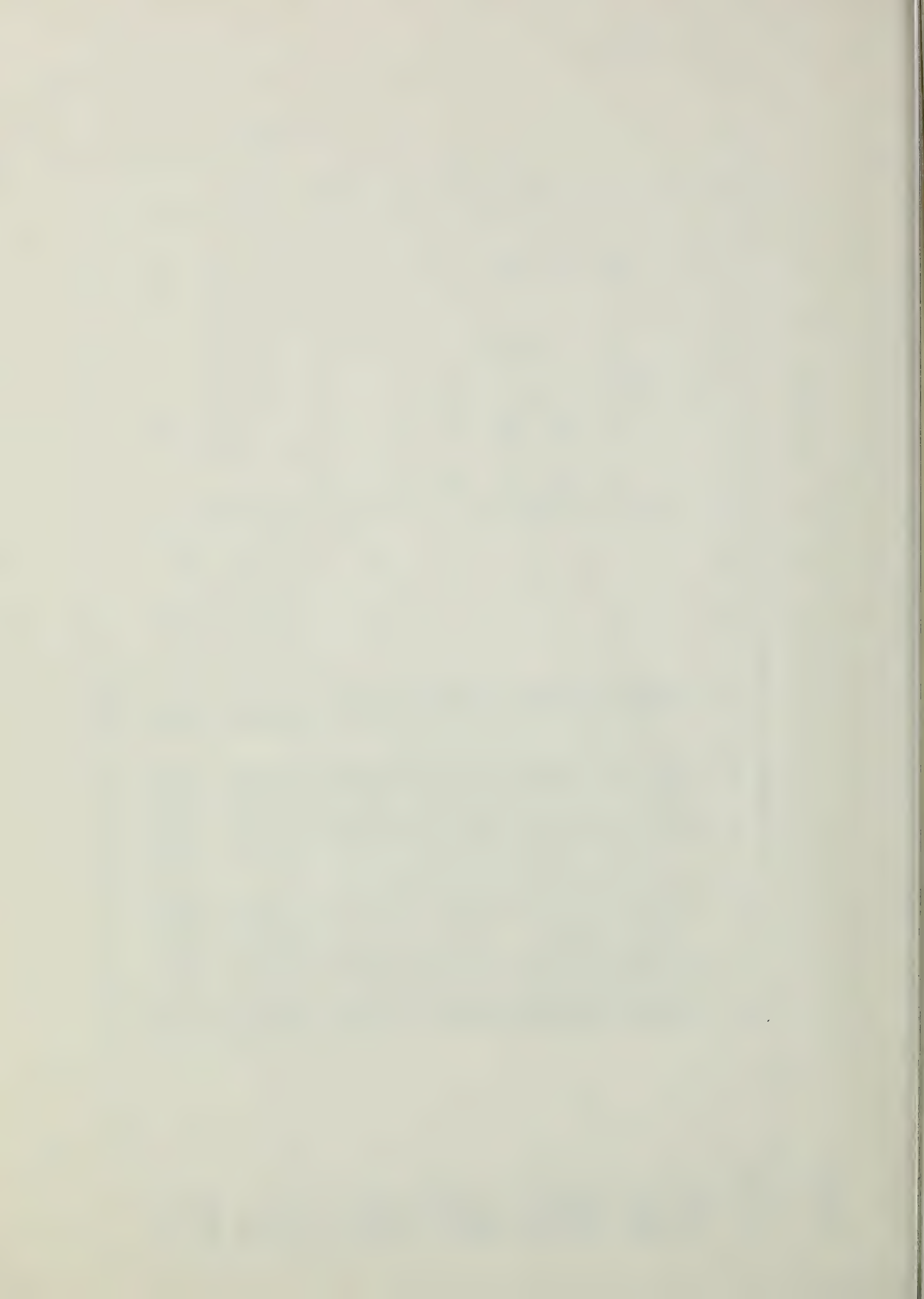


TABLE 13

DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=MINNESOTA STATION=MURRIS NURSERY=UNIFORM																									
VARIETY	_TW_	_KW_	_LG_	_MD_	_SM_	_PR_	_SEEX_	_SP_	_DU_	_VI_	_FR_	_RE_	_VAL_	_T#_	_KW_	_LG_	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	_SD_
CROSSBY	61.5	37.3	37	58	5	14.6	66.5		115				4												YS
LEEDS	62.5	37.6	41	55	4	15.8	65.5		115				4												YS
ROLETTE	62.0	40.3	44	50	6	15.0	67.5		110				3												YS
WARD	61.5	38.6	45	49	6	15.3	65.5		115				4												YS
WELLS	63.0	33.0	17	74	9	14.5	65.5		110				3		MN	MJ	PB								YS
BUTNO	62.0	37.7	37	59	4	14.7	67.0		110				3												PB
MACOUN	61.5	37.0	41	54	5	14.5	66.0		120				4												PB
MINDUM	57.5	28.9	9	72	19	13.2	64.0		105				1	MJ	MJ	MJ	MJ	PB							MN
RUGBY	61.5	41.2	44	50	6	15.0	67.0		110				3												PB
WAKOUMA	60.0	37.6	35	59	6	14.8	65.0		110				3	PB											PB
D6962	61.5	37.5	33	63	4	15.7	65.0		120				4												
D7047	61.5	38.3	38	57	5	15.7	66.0		115				4												
D7057	61.2	33.8	23	69	8	15.0	65.5		120				4		MN	MN	PB								
D7131	60.5	39.5	44	51	5	14.5	65.5		120				4	PB											
D7158	60.5	43.7	54	42	4	14.8	66.0		120				4	PB											
D7169	58.2	35.1	19	74	7	13.6	67.5		115				3	MJ	PB	MJ									
D7175	59.5	41.3	44	53	3	15.5	65.0		125				4	MN											
D71101	62.0	38.0	41	53	6	15.1	65.5		115				4												
D71110	62.0	39.1	43	51	6	14.7	65.0		115				4												
D71111	61.5	36.8	43	52	5	14.4	64.0		110				3						PB						PB
D71117	60.5	38.8	40	53	7	15.0	66.5		110				3	PB											PB
D71121	61.0	39.3	46	50	4	14.9	66.5		120				4												
D7233	61.0	40.5	51	46	3	15.1	66.5		110				3												PB
D7266	61.0	38.2	38	55	7	15.3	65.0		115				4												
D7268	60.5	35.6	25	67	8	14.4	64.5		115				4	PB	PB	MN	PB								
D72108	61.5	37.9	39	54	7	15.2	67.0		115				4												
D72110	62.0	36.6	44	53	3	15.8	66.0		120				4												
D72114	60.5	41.2	69	28	3	15.0	64.5		115				4	PB											
DT411	61.0	35.1	32	62	6	14.0	68.0		115				4		PB	PB	PB								PB

A/ See Table 1 for explanation of abbreviations and symbols.

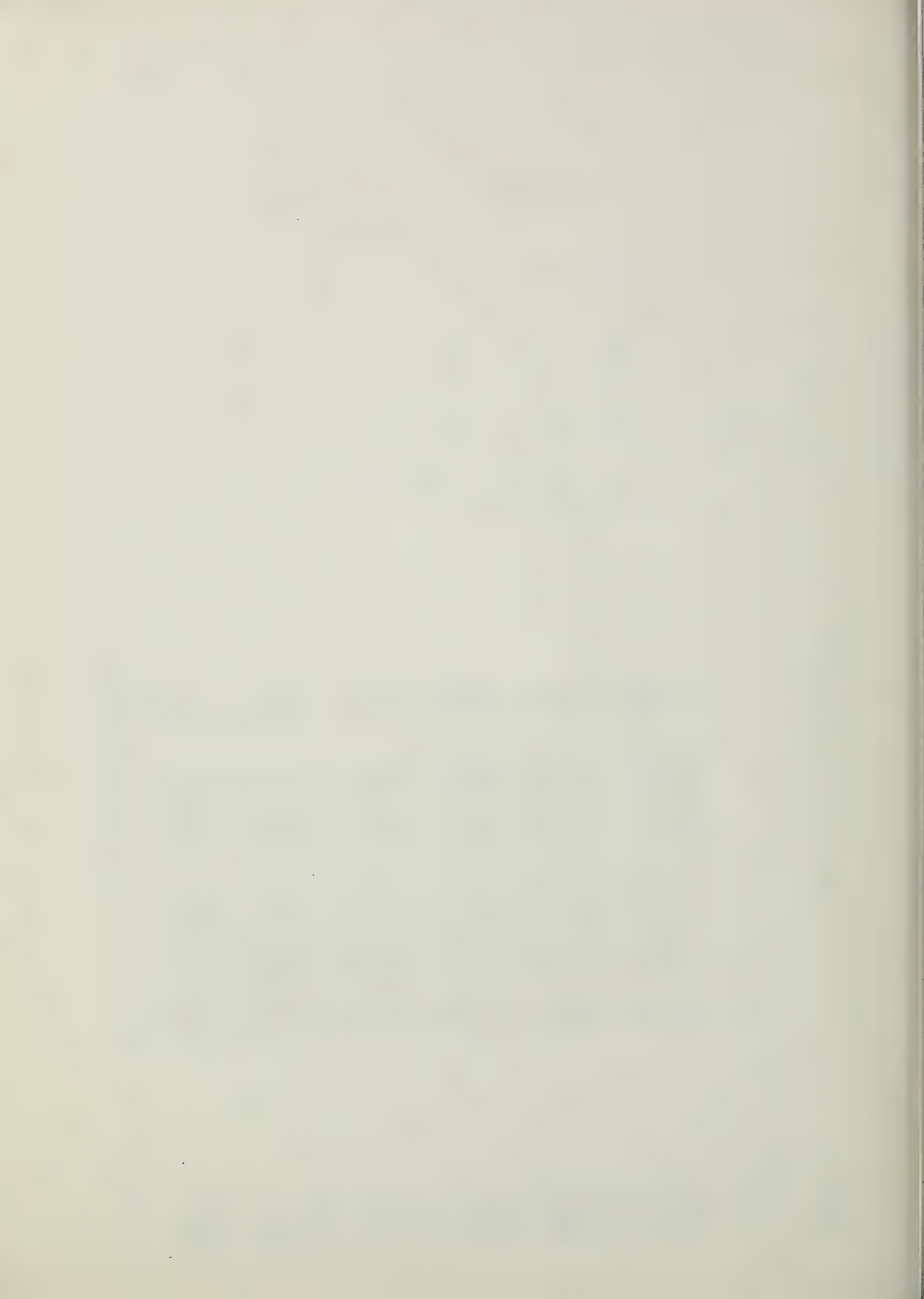


TABLE 14 DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=NORTH_DAKOTA STATION=CARRINGTON-IRRIGATED NURSERY=UNIFORM																									
VARIETY	_TW_	_KW_	_LG_	_MD_	_SM_	_PR_	_SEEX_	_SP_	_DU_	_VI_	_FR_	_RE_	_VAL_	_TW_	_KW_	_LG_	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	_SD_
CROSBY	62.0	41.3	54	44	2	13.9	64.0		110				4												YS
LEEDS	62.5	41.3	61	38	1	14.9	65.0		115				4												YS
ROULETTE	62.0	43.5	57	41	2	14.4	68.0		110				4												YS
WARD	61.0	45.2	67	31	2	14.6	65.0		110				4												YS
WELLS	61.0	35.6	26	68	6	14.3	63.5		105				1		MN	MJ	PB				PB				YS
BUTNG	60.0	40.0	48	50	2	13.8	67.0		105				3		PB	PB	PB				PB				
MACOUN	61.0	39.1	58	40	2	14.3	65.0		110				4		PB										
MINDUM	56.5	26.7	8	74	18	12.5	60.5		105				1		MJ	MJ	MJ		MJ		PB				
RUGBY	61.5	44.8	61	37	2	14.4	65.0		110				4												
WAKOUMA	59.0	34.5	23	72	5	14.9	62.5		110				1		MN	MJ	PB		PB						
D6962	61.0	39.3	6	92	2	13.8	67.5		115				1			PB	MJ								
D7047	61.0	39.7	43	53	4	13.0	66.9		110				4			PB	MN	PB							
D7057	60.0	37.0	32	63	5	12.6	66.0		110				1		PB	MN	MJ	PB							
D7131	60.5	52.4	80	18	2	13.9	68.0		125				4												
D7158	60.5	38.0	26	69	5	12.5	66.5		115				1			MN	MJ	PB							
D7169	57.0	35.7	12	83	5	12.2	66.0		110				1		MJ	MN	MJ	PB							
D7175	60.5	47.6	71	28	1	15.4	66.0		120				4												
D71101	60.5	41.7	57	41	2	14.2	66.5		110				4												
D71110	60.5	40.3	51	41	8	14.1	64.0		110				4			PB		MN							
D71111	61.0	41.2	52	45	3	13.8	66.0		110				4												
D71117	61.0	44.8	70	28	2	14.6	65.5		110				4												
D71121	61.0	45.2	66	32	2	13.8	66.5		110				4												
D7233	62.0	47.1	72	26	2	14.4	68.5		110				4												
D7266	59.5	38.9	41	55	4	13.3	66.0		110				4		PB	PB	MN	PB							PB
D7268	60.5	40.8	50	47	3	12.4	66.0		105				3												
D7275	62.5	47.4	71	27	2	14.9	68.5		115				4												
D72108	60.5	44.8	64	34	2	14.3	66.5		110				4												
D72110	61.5	39.7	61	37	2	14.2	65.0		120				4					PB							
D72114	61.0	46.1	78	21	1	13.5	64.5		105				3												PB
DT411	59.5	40.8	52	45	3	14.1	67.5		110				4		PB										
WEATHERMASTER	60.5	44.8	64	34	2	14.5	66.5		105				3												PB

^{A/} See Table 1 for explanation of abbreviations and symbols.

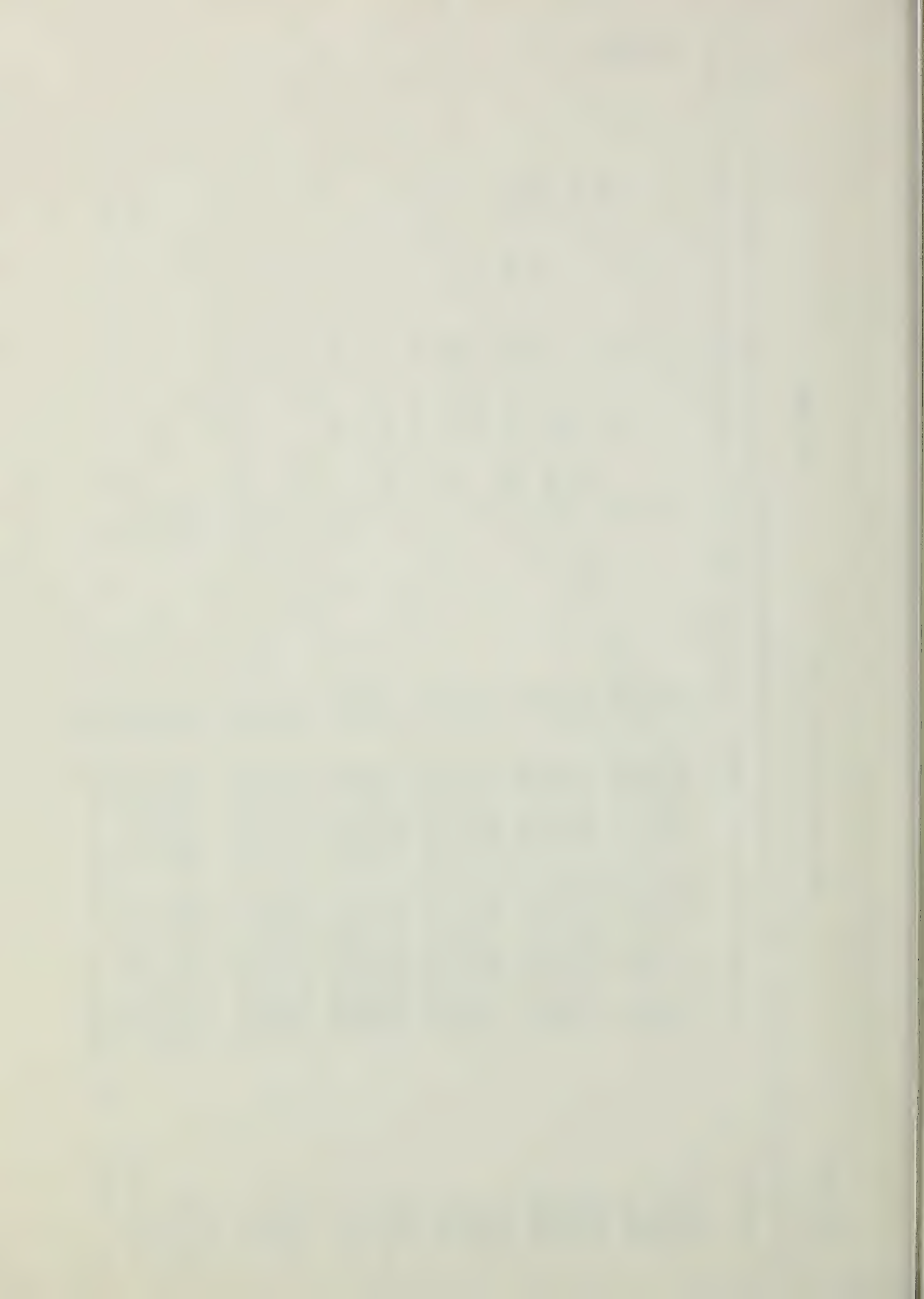


TABLE 15

DURLM QUALITY EVALUATION^{A/}

1975 CROP

VARIETY	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	VAL	TH	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
CROSBY	62.2	35.0	14	83	3	14.9	65.1		120				4		PB	PB									YS
LEEDS	63.0	36.0	25	73	2	15.1	67.4		115				4												YS
ROLETTE	63.0	38.8	27	71	2	15.5	68.0		115				4												YS
WARD	62.4	37.0	26	72	2	15.0	67.4		115				4												YS
WELLS	62.1	32.5	7	88	5	14.1	64.6		115				4		MN	MN	PB		PB						YS
BUTNO	62.5	40.0	20	77	3	14.9	68.0		115				4												
MACOUN	61.0	37.3	24	73	3	14.8	65.7		120				4		PB										
MINDUM	62.3	38.2	19	80	1	14.7	65.7		90				1												
RUGBY	62.5	36.8	15	82	3	15.0	66.3		120				4			PB									
WAKOUMA	61.5	35.2	7	90	3	14.9	64.0		115				4			MN			PB						
D6952	62.5	37.0	21	78	1	15.7	68.0		120				4												
D7047	62.5	36.1	17	80	3	14.3	68.0		120				4												
D7057	62.0	33.7	9	87	4	14.0	65.7		120				4		PB	MN	PB								
D7131	60.0	48.1	72	26	2	20.2	68.6		120				4												
D7158	62.0	35.2	10	87	3	14.0	66.3		125				4			MN									
D7169	60.3	34.1	5	91	4	13.3	68.0		125				3		PB	PB	MJ	PB							
D7175	61.5	39.8	29	70	1	14.9	66.9		125				4												
D71101	62.0	39.7	21	76	3	15.4	66.8		120				4												
D71110	62.0	38.3	23	74	3	14.9	66.2		115				4												
D71111	61.5	35.6	11	84	5	14.7	65.7		120				4			MN		PB							
D71117	61.5	39.1	32	66	2	15.3	67.4		110				3												MN
D71121	61.0	39.5	35	62	3	15.1	68.6		110				3		PB										MN
D7233	61.5	37.3	27	70	3	15.4	69.1		125				4												
D7266	62.5	37.0	23	75	2	14.7	66.9		125				4												
D7268	62.0	36.2	17	80	3	14.4	66.9		115				4												
D7275	62.5	41.3	41	56	3	16.0	68.0		120				4												
D72103	61.0	37.0	21	76	3	15.9	67.4		120				4		PB										
D72110	61.5	35.6	23	75	2	15.5	64.0		130				4												PB
D72114	61.5	39.7	50	49	1	15.3	64.6		115				4												PB
DT411	61.5	36.4	20	77	3	14.8	68.0		115				4												

^{A/} See Table 1 for explanation of abbreviations and symbols.

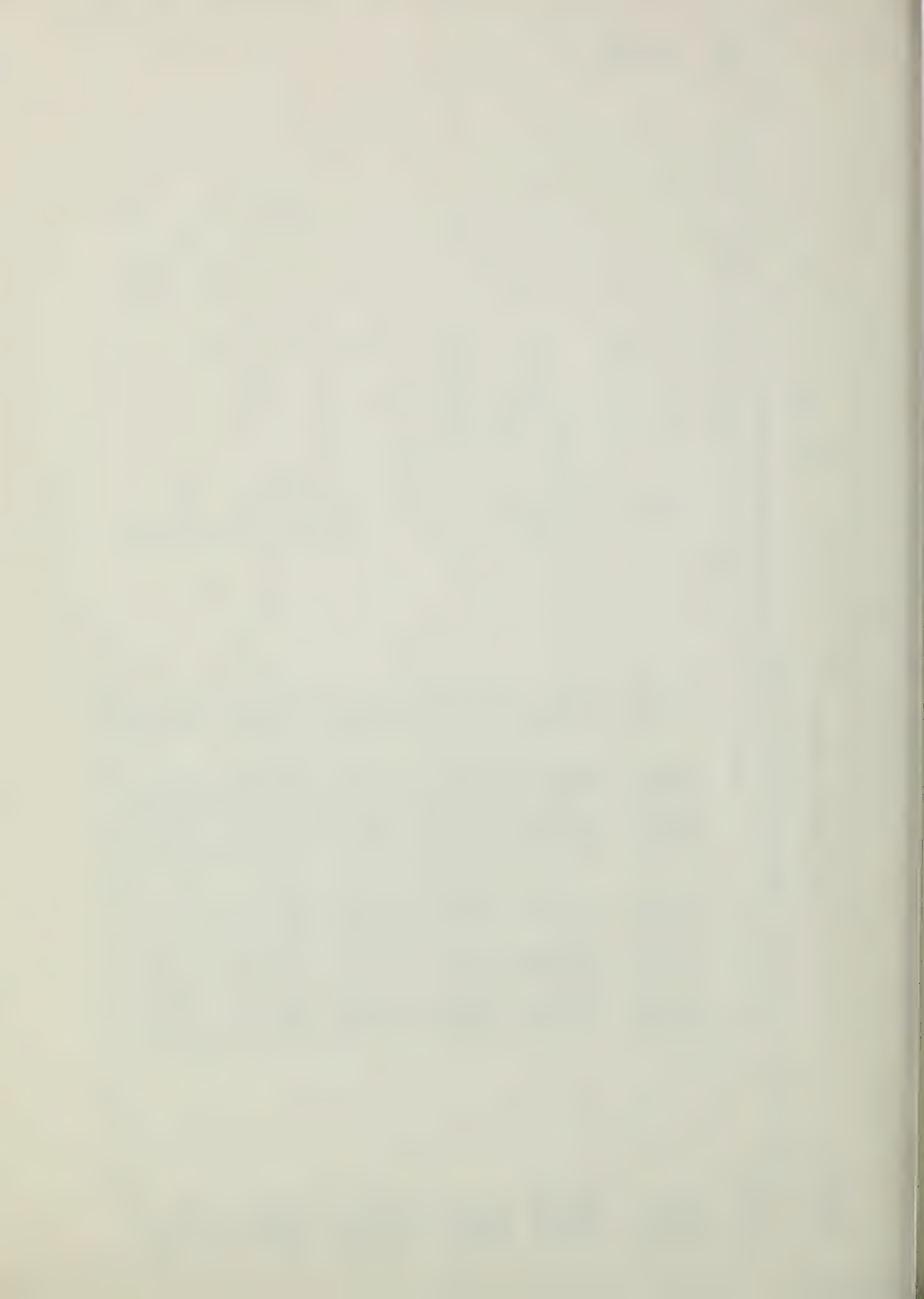


TABLE 16

DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=NORTH_DAKOTA STATION=WILLISTON NURSERY=UNIFORM																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	_LG_	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
CROSBY	59.5	27.0	3	82	15	17.4	52.6		125				4					PB						YS	
LEEDS	61.0	26.7	1	85	14	18.1	54.0		125				4											YS	
ROLETTE	61.0	23.8	4	86	10	16.5	57.0		125				4			PB								YS	
WARD	58.5	24.8	1	83	16	18.3	55.0		125				4											YS	
WELLS	58.0	24.5	1	73	26	17.3	52.5		120				3	PB	PB		MJ		PB		PB			YS	
BUTNO	58.5	28.4	1	82	17	18.1	57.5		125				4												
MACOUN	60.5	29.5	9	83	8	16.9	55.0		125				4												
MINDUM	62.5	28.7	3	90	7	17.3	54.5		95				1								MJ				
RUGBY	58.0	23.8	1	80	19	18.7	53.1		125				4	PB	PB		PB								
WAKOOMA	59.0	26.2	1	84	15	18.7	50.9		110				1					MN			MJ				
D0962	60.5	24.7	1	83	16	17.1	56.5		130				4			PB									
D7047	58.0	23.1	1	77	22	17.3	54.5		125				4	PB	MN		MN								
D7057	57.5	24.9	1	68	31	18.0	53.0		125				1	PB			MJ								
D7131	60.0	41.7	45	53	2	16.3	59.0		130				4												
D7158	60.5	27.0	3	80	17	17.2	56.0		125				4												
D7169	54.5	22.6	1	63	36	17.2	56.5		120				1	MJ	MN		MJ				PB				
D7175	59.5	32.6	4	88	8	17.6	57.0		130				4												
D71101	60.0	29.7	4	83	13	16.6	56.5		130				4												
D71110	58.5	28.2	3	84	13	17.2	55.0		125				4												
D71111	58.5	28.8	1	86	13	18.1	55.0		125				4												
D71117	58.0	28.7	3	84	13	17.7	55.0		125				4	PB											
D71121	60.0	31.2	11	80	9	16.9	57.5		125				4												
D7233	60.0	31.8	6	85	9	17.1	58.5		130				4												
D7256	57.5	26.5	0	70	30	17.8	55.0		125				1	PB			MJ								
D7268	56.5	25.3	0	67	33	17.6	55.0		120				1	MN			MJ				PB				
D7275	61.0	31.3	8	85	7	17.1	57.5		130				4												
D72108	59.5	29.6	3	84	13	17.6	56.0		130				4												
D72110	59.0	27.5	2	88	10	17.4	54.5		130				4												
D72114	59.5	31.3	16	80	4	16.8	53.5		125				4												
D7411	58.5	29.1	1	84	15	17.3	56.5		120				3											PB	

^{A/} See Table 1 for explanation of abbreviations and symbols.

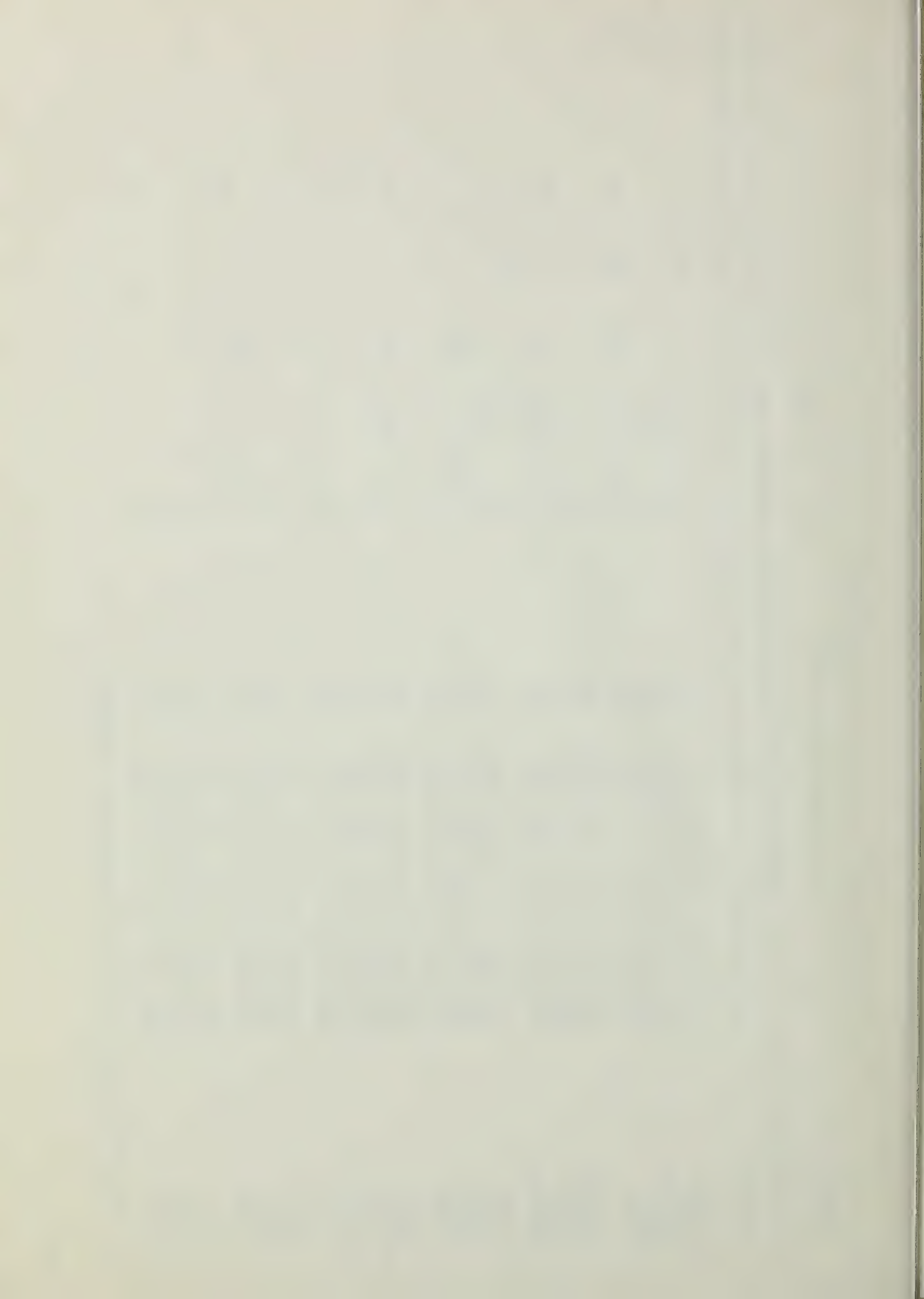


TABLE 17

DURUM QUALITY EVALUATION^{A/}

1975 CROP

STATE=SOUTH_DAKOTA STATION=WATERTOWN NURSERY=UNIFORM																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	_SD_
CROSBY	59.0	30.2	8	82	10	16.2	57.8		125				4		PB	PB	PB	PB							YS
LEEDS	60.5	31.7	10	82	8	16.3	60.0		125				4						PB						YS
ROLETTE	60.5	33.4	15	78	7	15.8	61.0		125				4												YS
WARD	62.0	34.1	23	71	6	15.4	60.4		125				4												YS
WELLS	59.0	28.2	10	80	10	15.7	60.0		125				4		MN		PB								YS
BOTNO	61.5	34.2	22	72	6	15.7	61.8		115				2								MJ				
MACJUN	60.5	29.3	5	83	12	16.6	60.5		125				4		PB	MN	PB								
MINDUM	58.5	30.1	6	84	10	16.2	60.0		125				4	PB	PE	PB	PB								
RUGBY	61.5	32.9	13	80	7	15.7	61.0		125				4												
WAKOOMA	60.0	33.0	16	78	6	15.2	60.5		125				4												
D6962	60.0	32.6	21	73	6	14.9	60.0		125				4												
D7047	61.0	32.8	23	72	5	16.2	60.5		130				4												
D7057	60.5	30.6	15	76	9	15.9	59.5		130				4		PB										
D7131	59.5	29.5	22	69	9	16.2	59.5		130				4		PB										
D7158	62.0	30.3	13	78	5	15.8	61.5		125				4		PB										
D7169	56.5	44.4	19	71	10	15.9	58.0		125				3	MJ			PB		PB						
D7175	61.0	29.6	13	79	8	16.2	61.0		125				4		PB										
D71101	61.0	31.6	14	80	6	16.1	60.5		120				3								PB				
D71110	60.0	31.6	12	80	8	15.9	60.0		125				4												
D71111	60.5	31.7	15	77	8	16.3	59.5		125				4												
D71117	59.5	31.8	13	80	7	15.7	58.7		120				3								PB				
D71121	60.5	32.7	20	73	7	15.9	61.5		120				3								PB				
D7233	61.0	31.2	16	77	7	16.1	60.0		120				3								PB				
D7266	59.5	30.3	7	83	10	16.8	58.7		125				4		PE	PB	PB								
D72108	59.0	32.9	17	75	8	15.8	60.0		125				4												
D72110	60.5	32.5	21	74	5	15.3	61.5		120				3								PB				
D72114	58.5	31.0	18	71	11	15.9	58.0		120				3	PB			PB		PB						PB
DT411	60.0	29.4	9	79	12	15.3	60.0		125				4		PB	PB	PB								

^{A/} See Table 1 for explanation of abbreviations and symbols.

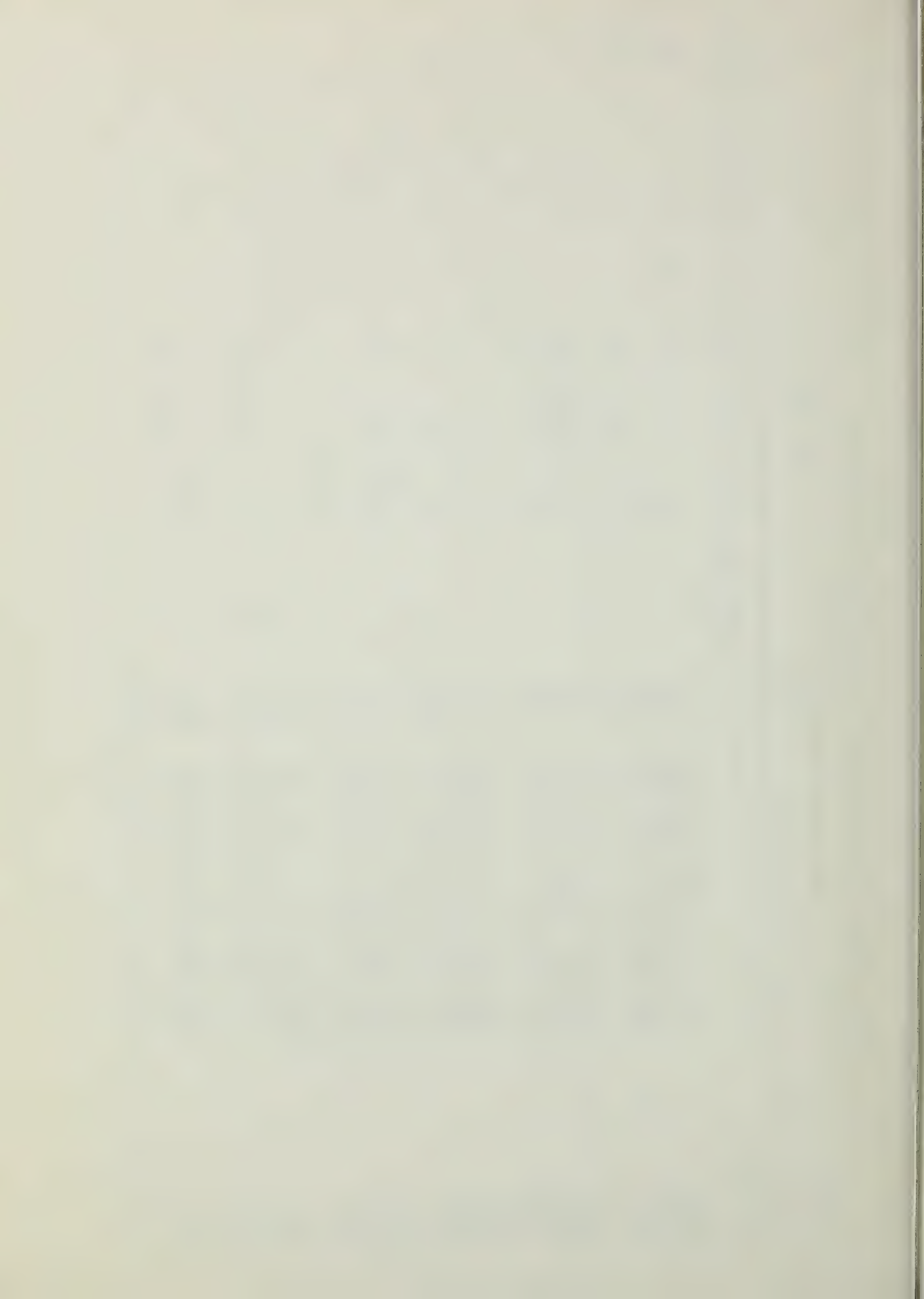


TABLE 18

OURUM QUALITY EVALUATION^{A/}

1975 CROP

----- STATE=SOUTH_DAKOTA STATION=SELBY NURSERY=UNIFORM -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	_LG_	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
CRUSBY	60.5	30.4	8	84	8	15.7	59.5		125				4			PB									YS
LEEDS	61.5	32.9	16	81	3	16.1	58.7		125				4												YS
ROLETTE	59.0	31.9	6	87	7	16.0	59.5		125				4			PB									YS
WARD	59.0	34.1	22	72	6	15.7	58.7		120				3								PB				YS
WELLS	60.5	28.2	6	83	11	15.5	58.0		120				3			MN	PB	PB			PB				YS
BUTNU	59.0	31.3	14	79	7	16.0	60.5		125				4												
MACOUN	58.0	30.5	12	81	7	14.9	58.7		125				4			PB									
MINDUM	59.0	26.7	2	84	14	15.6	59.0		105				1			MN	MN	MN			MJ				
RUGBY	58.0	30.2	7	85	8	15.9	59.0		125				4			PB	PB								
WAKUOMA	58.0	31.0	5	88	7	15.8	57.0		120				3			PB	PB		PB		PB				
D6962	60.5	34.4	17	79	4	16.9	59.0		130				4												
D7047	60.0	36.0	17	79	4	16.9	60.5		125				4												
D7057	60.5	32.3	11	81	8	15.4	60.0		125				4												
D7131	57.0	29.1	45	51	4	16.6	60.0		130				4			MN	PB								
D7158	58.0	30.1	8	83	9	15.9	57.5		125				4			PB	PB				PB				
D7169	58.5	27.7	5	83	12	15.2	60.4		130				4			PB	MN	PB	MN						
D7175	59.0	34.6	20	75	5	15.8	60.9		125				4												
D71101	60.0	23.6	4	87	9	16.1	61.0		130				3			NJ	PB	PB							
D71110	59.5	31.6	22	71	7	15.8	59.6		125				4												
D71111	57.5	30.6	10	79	11	16.3	59.0		125				4			MN	PB		PB						
D71117	61.0	32.7	20	74	6	16.1	60.5		125				4												
D71121	58.5	31.4	10	82	8	15.9	60.9		125				4			PB									
D7233	59.5	33.2	27	67	6	16.2	61.3		125				4												
D7266	60.0	33.2	13	80	7	17.0	59.6		120				3								PB				
D72108	60.0	30.7	13	81	6	16.2	59.5		120				3			PB					PB				
D72110	59.5	28.0	8	86	6	16.2	59.5		135				4								MN				
D72114	59.0	30.1	22	73	5	16.3	58.7		130				4			PB					PB				
DT411	58.0	26.6	7	84	9	16.3	60.0		125				4			PB	MN	PB			PB				

^{A/} See Table 1 for explanation of abbreviations and symbols.

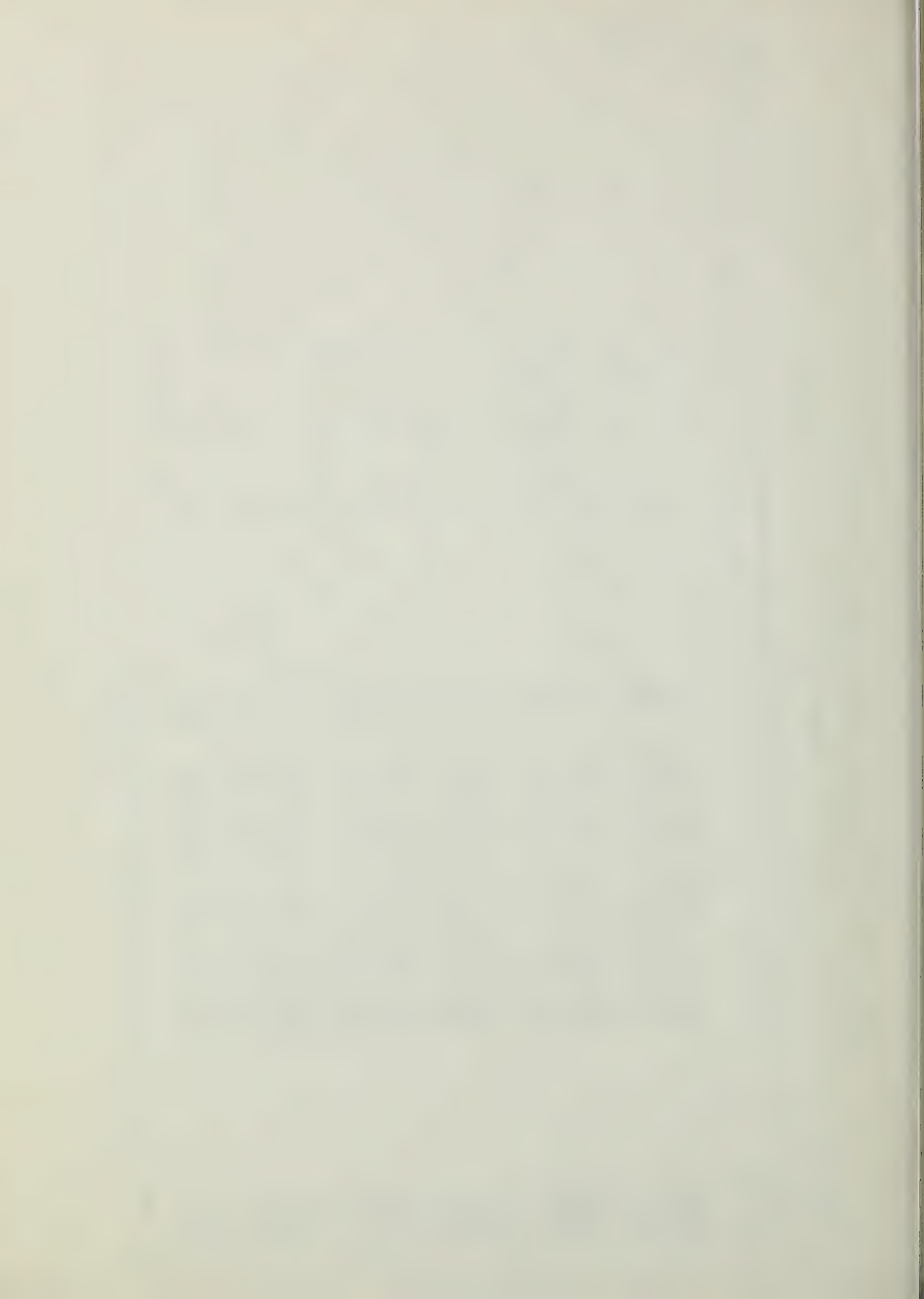


TABLE 19

DURUM QUALITY EVALUATION^{A/}

1975 CROP

----- STATE=MONTANA STATION=SIDNEY NURSERY=UNIFORM -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	LG	SM	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE_	SD
CROSBY	61.5	31.6	6	89	5	14.4	58.5		125				4		PB	PB	PB								YS
LEEDS	63.0	35.6	20	78	2	14.7	56.0		125				4												YS
ROULETTE	63.0	35.6	16	82	2	14.0	58.0		120				3								PB				YS
WARD	61.0	33.2	10	87	3	14.3	58.0		125				4												YS
WELLS	62.5	29.6	5	88	7	13.9	54.0		120				3		MN	PB	PB		MN		PB				YS
BOTNO	60.5	31.8	6	89	5	14.6	61.0		120				3	PB	PB	PB	PB				PB				
MACOUN	61.5	34.1	22	75	3	14.2	53.0		125				3						MJ						
MINDUM	63.5	34.2	21	76	3	13.8	49.5		105				1						MJ		MJ				
RUGBY	61.5	33.4	13	84	3	14.4	57.5		125				4												
WAKOUMA	62.5	36.0	14	84	2	14.5	53.0		120				3						MJ		PB				
D6962	62.5	35.6	14	83	3	14.0	59.0		125				4												
D7047	61.5	33.6	18	77	5	13.6	59.5		125				4				PB								
D7057	61.5	30.7	7	88	5	13.9	58.5		125				4		PB	PB	PB								
D7131	62.5	44.1	63	36	1	13.9	60.5		135				4												
D7158	60.5	30.1	4	87	9	14.0	55.0		130				3	PB	MN	PB	MN		PB						
D7169	59.0	27.8	3	87	10	13.3	58.5		120				3	MN	MJ	MN	MN				PB				
D7175	62.5	40.7	34	65	1	14.4	58.0		135				4												
D71101	61.0	34.6	9	88	3	14.1	60.4		130				4												
D71110	61.5	34.4	19	77	4	13.7	58.7		125				4												
D71111	61.0	34.0	14	82	4	14.3	60.0		120				3								PB				
D71117	61.0	36.0	24	73	3	14.2	61.5		120				3								PB				
D71121	60.5	35.7	15	82	3	14.2	60.0		125				4		PB										
D7233	62.0	35.8	24	74	2	14.3	60.0		125				4												
D7266	62.5	35.1	15	81	4	13.7	59.0		125				4												
D72108	61.0	37.0	21	77	2	14.3	61.0		125				4												
D72110	61.5	35.3	18	79	3	14.3	56.0		130				4												
D72114	61.5	37.5	41	57	2	14.3	52.5		120				3						MJ				PB		
D7411	60.5	34.8	13	82	5	14.1	58.5		125				4		PB		PB								

^{A/} See Table 1 for explanation of abbreviations and symbols.

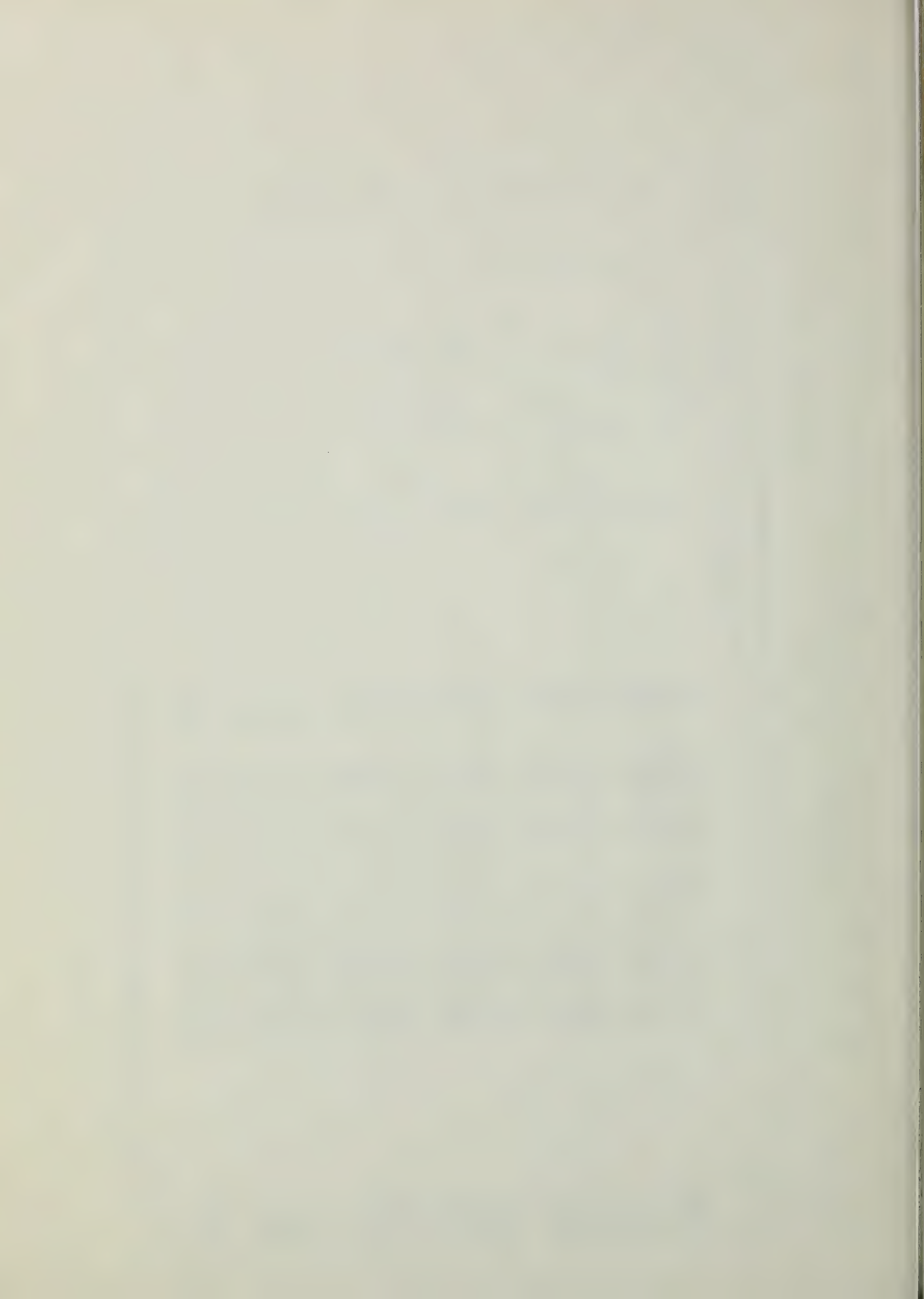


TABLE 20

DURUM QUALITY EVALUATION ^{A/}

1975 CROP

----- STATE=MONTANA STATION=HAVRE NURSERY=UNIFORM -----																									
VARIETY	_TW_	_KW_	LG	MD	SM	_PR_	SEEX	SP	DU	_VI_	_FR_	_RE_	VAL	_TW_	_KW_	LG	_SM_	_PR_	_MG_	_SP_	_DU_	_VI_	_FR_	_RE	SD
CROSBY	62.0	30.3	7	87	6	12.8	55.0		120				4			PB	PB	PB							YS
LEEDS	63.0	33.7	12	85	3	13.8	58.0		130				4												YS
ROULETTE	62.5	34.8	16	81	3	14.1	55.5		120				4												YS
WARD	61.0	34.0	16	80	4	13.0	58.0		125				4												YS
WELLS	62.0	29.8	19	75	6	11.7	54.5		110				2			MN		PB			MJ				YS
BOTNO	61.5	31.5	7	88	5	13.9	58.0		120				4			PB	PB								
MACOUN	61.5	35.3	29	68	3	12.9	56.0		125				4												
MINDUM	63.0	36.2	44	54	2	12.9	58.5		95				1								MJ				
RUGBY	61.0	34.0	19	77	4	12.6	58.5		120				4												
WAKUUMA	61.0	35.6	24	74	2	12.8	55.5		115				3								MN				
D6962	63.0	36.0	28	70	2	12.9	59.5		120				4												
D7047	62.0	33.1	20	76	4	13.0	59.0		125				4												
D7057	61.5	31.3	14	81	5	12.1	57.0		120				4			PB									
D7131	60.0	43.3	64	34	2	12.8	59.0		120				4			PB									
D7158	61.0	32.3	11	82	7	12.2	57.5		130				4					PB							
D7169	59.5	32.4	13	81	6	11.5	60.0		115				3			MN		PB			MN				
D7175	61.5	37.7	20	78	2	13.5	57.0		125				4												
D71101	61.5	34.0	14	83	3	12.9	59.5		125				4												
D71110	62.0	35.7	38	59	3	12.4	55.0		110				2								MJ				
D71111	61.5	34.0	25	70	5	12.1	56.5		120				4												
D71117	61.0	33.3	20	75	5	13.2	55.5		120				4												
D71121	61.5	33.0	20	76	4	12.6	59.0		125				4												
D7233	61.5	39.1	7	91	2	12.8	61.5		125				4					PB							
D7266	62.0	34.0	28	68	4	12.4	57.5		120				4												
D72108	61.0	36.1	29	67	4	13.4	59.5		115				3								MN				
D72110	62.0	33.3	36	61	3	16.6	55.5		125				4												
D72114	62.5	36.9	54	45	1	12.0	55.5		120				4												
DT411	60.5	31.8	7	86	7	13.2	60.0		120				4			PB		PB							PB

^{A/} See Table 1 for explanation of abbreviations and symbols.

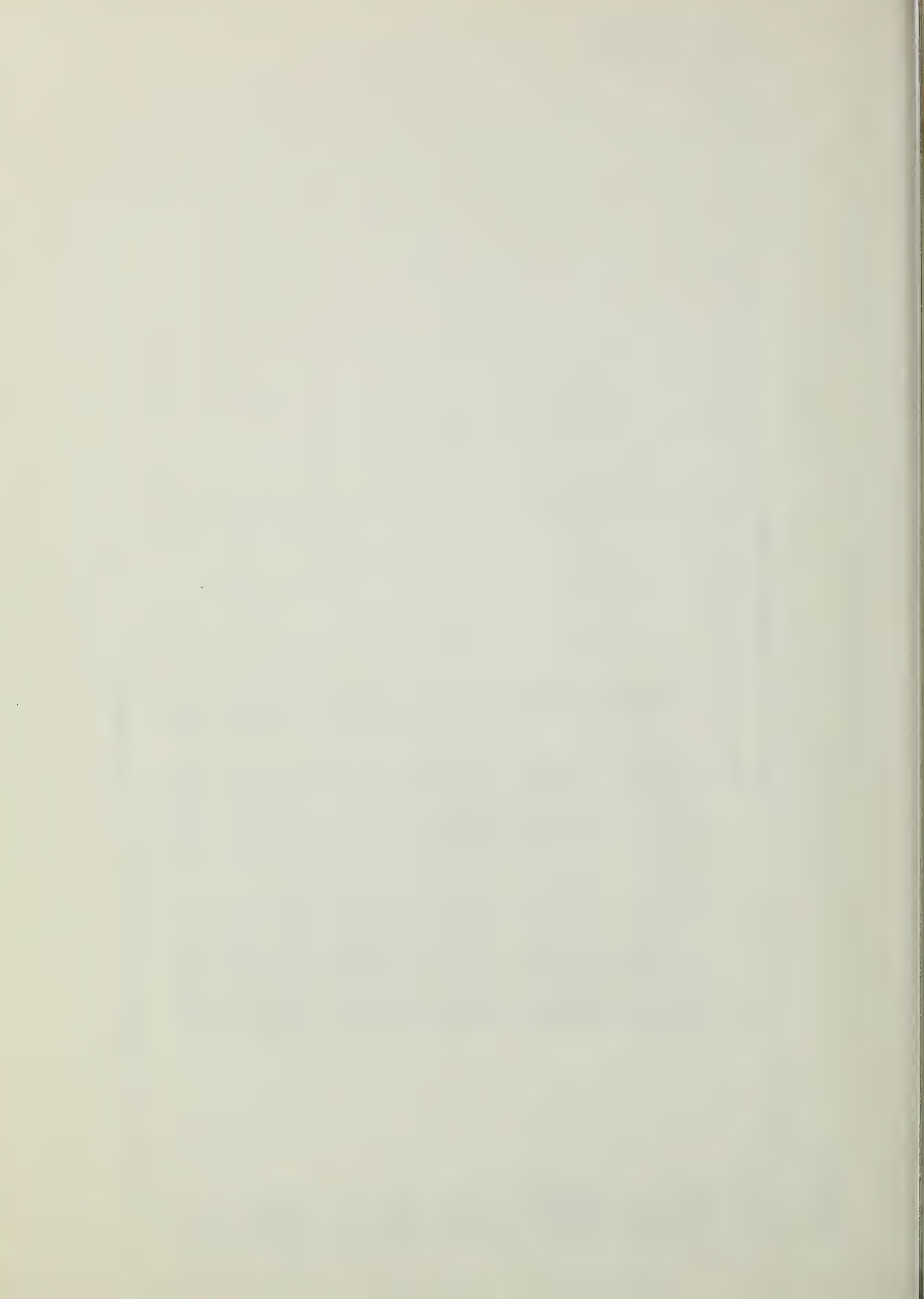


TABLE 21

DURUM QUALITY EVALUATION^{A/} 1975 CROP

----- STATE=WASHINGTON STATION=PULLMAN NURSERY=UNIFORM -----														-----											
VARIETY	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
CROSBY	63.0	45.7	68	30	2	12.3	59.5		105				4												YS
LEEDS	62.5	49.3	63	34	3	11.5	56.5		85				1						PB						YS
WARD	62.5	42.9	59	38	3	11.3	58.5		115				4		PB	PB									YS
BOTNO	63.0	39.5	55	43	2	11.5	60.5		85				1		MN	MN									YS
MACOUN	63.0	45.2	65	34	1	12.1	56.0		110				4						PB						
RUGBY	62.0	47.6	69	30	1	12.1	61.0		110				4												
WAKOUMA	60.0	48.1	64	35	1	12.1	57.7		95				3	MN											MN
WANDELL	63.0	41.5	62	35	3	12.1	57.0		105				4		MN										
D6962	62.5	47.1	73	26	1	12.3	61.0		105				4												
D7025	62.0	52.1	77	22	1	11.3	61.0		95				3												MN
D7047	63.0	50.3	78	21	1	12.8	63.0		115				4												
D7057	63.0	46.3	67	32	1	12.9	60.0		120				4												
D70101	62.0	42.2	55	42	3	12.1	60.0		105				4		MN	MN									
D7131	63.0	46.1	62	37	1	12.0	59.5		105				4												
D7150	61.0	47.6	72	27	1	11.8	59.0		90				1	PB											MJ
D7158	60.5	51.3	73	26	1	12.3	58.3		100				4	PB											
D7169	63.0	42.7	67	32	1	11.4	59.0		80				1		PB										MJ
D7171	63.0	43.5	57	42	1	10.8	61.5		85				1		PB	PB									MJ
D7175	61.0	45.2	65	34	1	12.1	61.0		105				4	PB											
D7176	64.0	52.1	83	16	1	12.6	59.5		95				3												MN
D71110	61.0	48.1	69	30	1	13.2	59.5		100				4	PB											
D71111	61.5	47.4	69	30	1	11.7	59.4		90				1												MJ
D71117	62.5	46.1	67	32	1	12.6	57.5		115				4												
D7411	60.0	46.9	67	32	1	12.7	59.4		110				4	MN											

^{A/} See Table 1 for explanation of abbreviations and symbols.

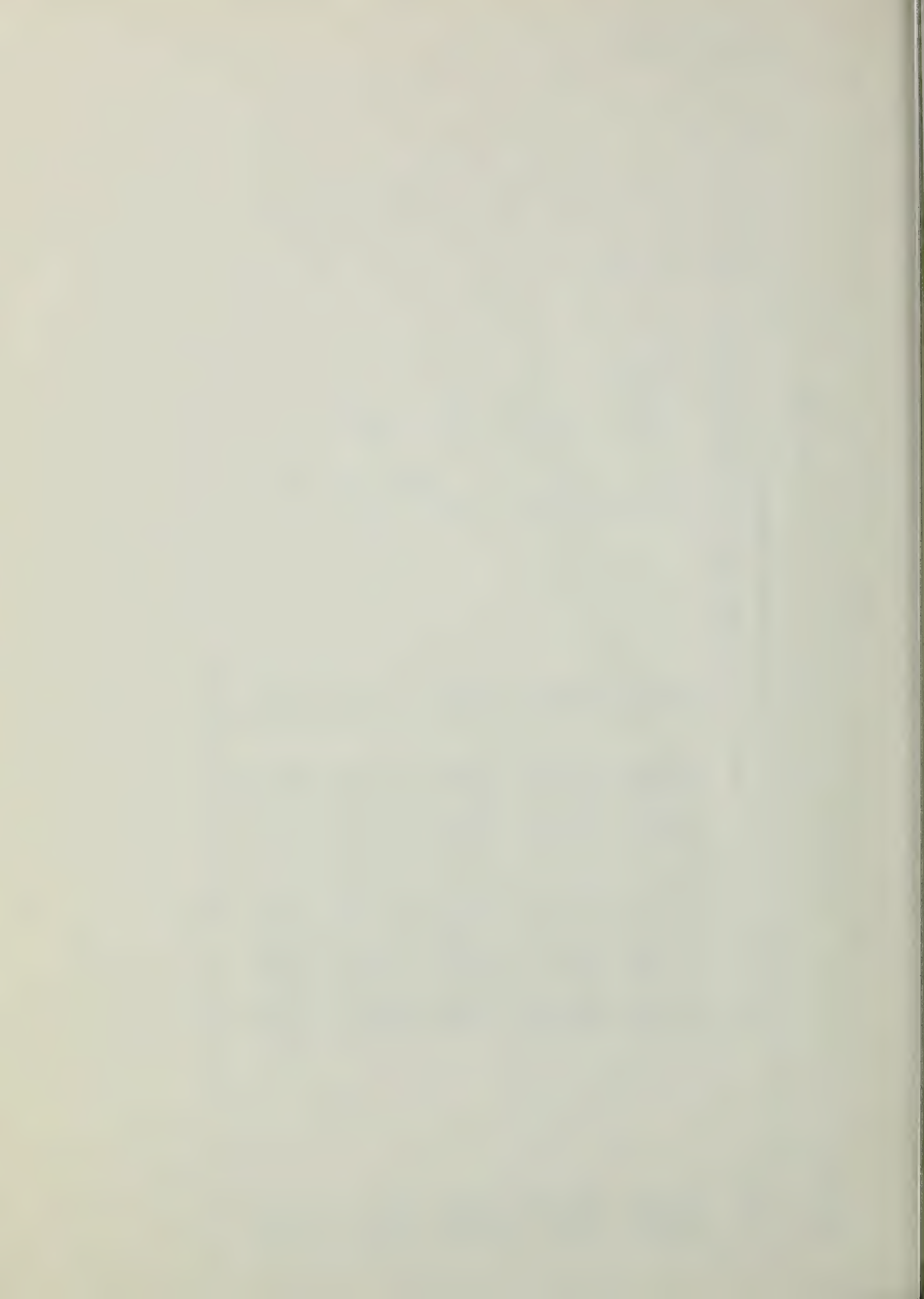


TABLE 22 DURUM QUALITY EVALUATION^{A/} 1975 CROP

STATE=OREGON STATION=PENDLETON NURSERY=UNIFORM															
VARIETY	TW_KW_LG_MD_SM_PR_SEEX_SP	DU_VI_FR_RE_VAL	TW_KW_LG_SM_PR_MG_SP	DU_VI_FR_RE	SD										
STANDARD BLEND	61.8 36.2 46 50 4 13.4 61.8	115				4									YS
CRANE	59.0 46.3 70 28 2 13.6 63.5	75				1	MN								MJ
CRANE 'B'	58.5 46.9 71 26 3 13.7 62.0	75				1	MN								MJ
CUCURIT 71	57.0 43.9 64 31 5 13.1 67.0	70				1	MJ								MJ
GERARDO 565	58.0 50.8 73 25 2 13.8 64.5	75				1	MJ								MJ
QUILAFEM	59.5 47.6 70 26 4 13.7 65.5	105				2	PB								MJ
WANDELL	58.0 32.1 13 77 10 12.2 64.5	100				1	MJ	MN	MJ	MN					MJ
D7114	61.5 45.0 67 30 3 13.1 65.0	80				1									MJ
IDC086	58.0 32.4 10 80 10 12.7 65.0	110				1	MJ	MN	MJ	MN					PB
IDC093	60.0 41.8 62 34 4 13.6 65.5	100				1	PB								MJ
MD000136	61.0 45.5 68 30 2 13.0 65.5	85				1									MJ
ND66151	58.0 38.0 47 47 6 13.4 66.0	105				2	MJ			PB					MJ
ND6962	58.5 43.1 53 43 4 14.6 66.0	110				3	MN								PB
ND7019	60.0 40.5 47 49 4 14.1 66.5	100				1	PB								MJ
ND7047	59.0 38.2 45 45 6 14.8 66.0	115				4	MN			PB					
ND7099	58.0 37.3 40 53 7 13.7 65.5	100				1	MJ		PB	PB					MJ
TLD-701-B	60.2 42.7 66 31 3 14.5 62.5	100				1	PB								MJ
TLD-701-LD	60.5 41.5 61 36 3 14.0 63.0	100				1									MJ
WA6176 K6800707	56.0 32.1 26 66 8 14.6 62.5	120				1	MJ	MN	MJ	PB					
WA6175	55.0 24.8 8 74 18 14.0 61.5	100				1	MJ	MJ	MJ	MJ					MJ
WA6177	58.0 29.3 10 78 12 12.5 64.0	100				1	MJ	MJ	MJ	MJ					MJ
WA6178	59.5 30.6 17 71 12 12.7 64.0	105				1	PB	MN	MJ	MJ					MJ
WA6180	59.5 30.3 18 72 10 13.5 62.5	100				1	PB	MJ	MJ	MN					MJ
WA6181	55.0 31.9 26 66 8 14.0 64.5	110				1	MJ	MN	MJ	PB					PB
WA6182	56.5 25.1 8 76 16 13.7 63.5	115				1	MJ	MJ	MJ	MJ					
WA6183	59.0 39.2 52 43 5 14.9 65.0	100				1	MN								MJ
WA6184	59.0 38.8 50 46 4 15.4 65.0	95				1	MN								MJ
WA6185	59.0 34.4 34 59 7 14.2 65.5	100				1	MN	PB	MN	PB					MJ
WA6186	55.5 28.9 27 67 6 14.0 66.5	115				1	MJ	MJ	MJ	PB					PB
WA6187	54.0 29.8 29 60 11 14.3 65.5	110				1	MJ	MJ	MJ	MN					PB

^{A/} See Table 1 for explanation of abbreviations and symbols.

